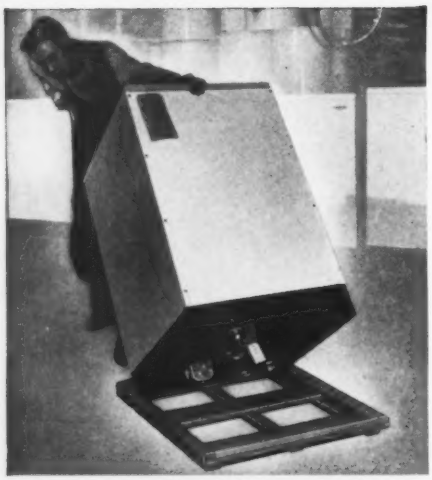
WESTERN INDUSTRY

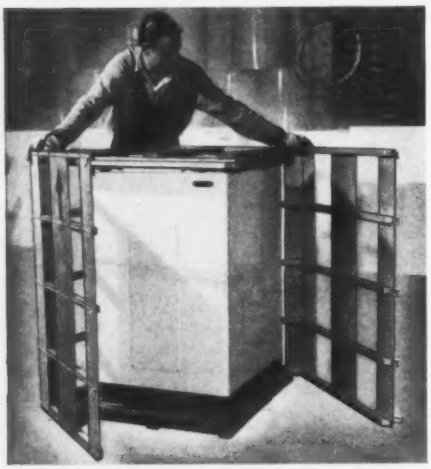
• *Western resources feed the stream of industry. Electric furnaces produce ferro-manganese.* *For details see page 5.*

APRIL 1950 VOLUME XV NUMBER 4

- **Are your methods comparable to these 211 Western operations? p. 35**
- **Rugged power when and where you want it:—fluid motors. p. 44**
- **How engineering and good headwork can save shop time. p. 44**
- **Improvement on in-plant feeding: Free bus ride to hot food. p. 48**



Step 1. Heater is lowered onto container base.



Step 2. Top in place and wrap-around goes on.

Step 3. Zip! Wrap-around is closed, ready to ship!

SAVES TIME!

CABCO ALL-BOUND CONTAINERS REDUCE PACKING TIME 50% FOR ELECTRIC HEATER MANUFACTURER

Wesix Electric Heater Company of San Francisco says Cabco all-bounds cut their packing time 50% on new Wesix table-top water heaters. Compact, 3-piece Cabco all-bounds have replaced costly 24-piece nailed crates and eliminated laborious assembly by hand. Now the Company packs its 30-gallon heater in 8 minutes or less. The Cabco containers also save Wesix 13% on shipping weight. And their open construction permits quick identification of the product inside.

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from the fruit and produce business to the manufacture of heavy machine parts . . . shippers are taking advantage of the multiple benefits found in Cabco all-bounds. These modern Cabco containers give excellent product protection, weigh less, stack and store in minimum space, are easy to handle, and fold together in minutes without hammer or nails. Cabco containers are made by the West's oldest, foremost manufacturer of wooden containers.

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*Reg. U. S. Pat. Off.

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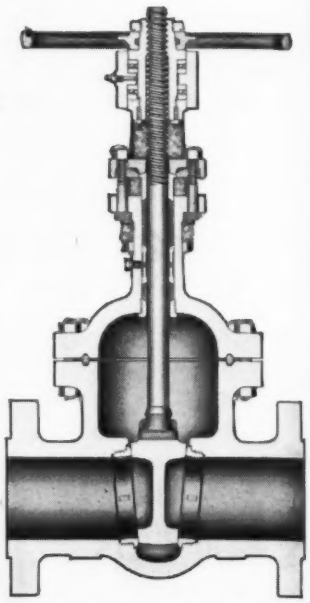

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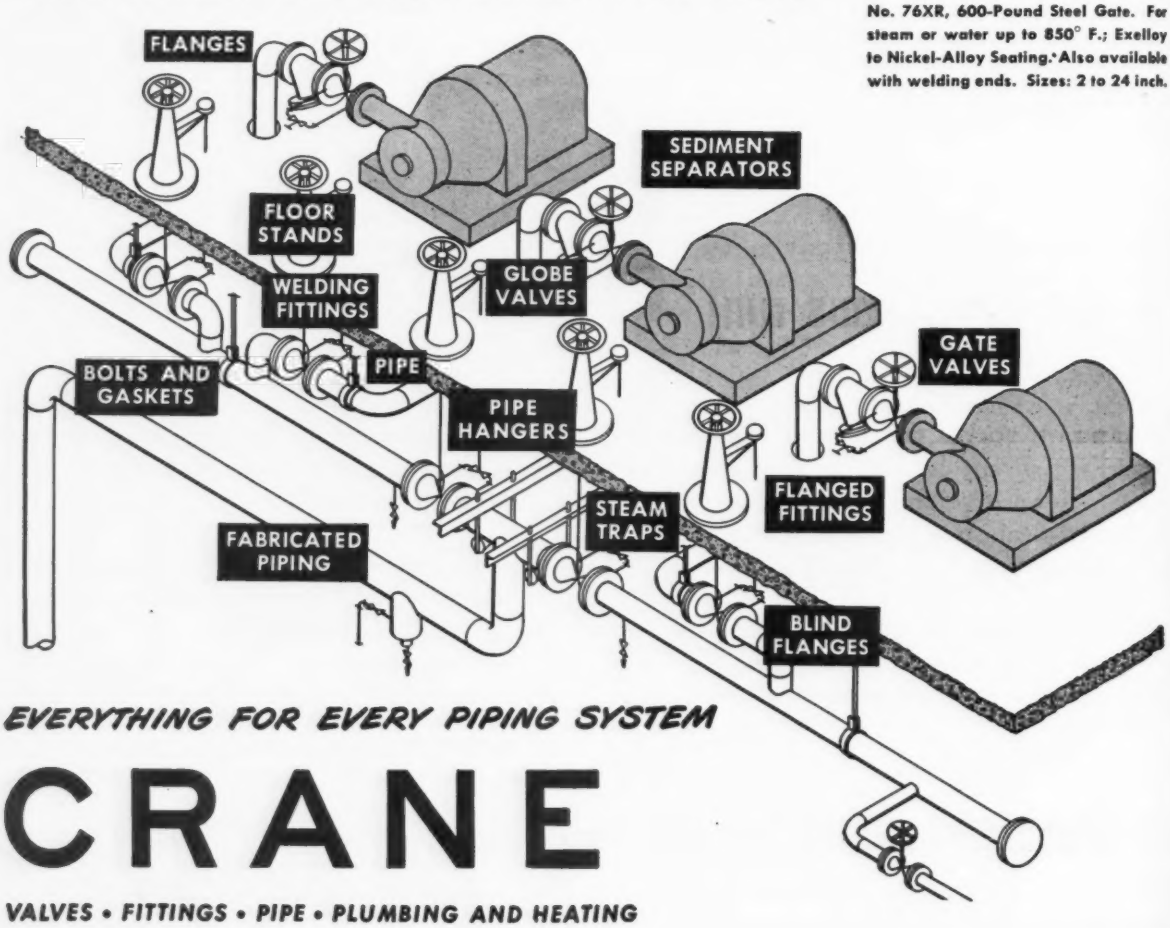

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This Month in WESTERN INDUSTRY

VOLUME XV APRIL · 1950 NUMBER 4

Editorial Page 19

The Hard Way Is the Easiest
Real Safety First

Articles

Methods of 211 Western Plants: How Do Yours Compare? 35
Planning Pays Off in Shrinking a Big Cylinder Around a Liner . . . 42
Take Fluid Power to Your Job in Either Field or Factory 44
Transporting Workers to Hot Food Steps Up In-Plant Feeding . . . 48
Labor and the Industrial West:
Wage Change Table 50
Wage Changes 51
Employers Still Bad Says AFL Leader So Let's Vote for Truman Again 52

Regional Reviews

Tehachapi to Tijuana 54
Olympics to the Coeur d'Alenes 58
The Continental Divide 62
The Wasatch Front 64

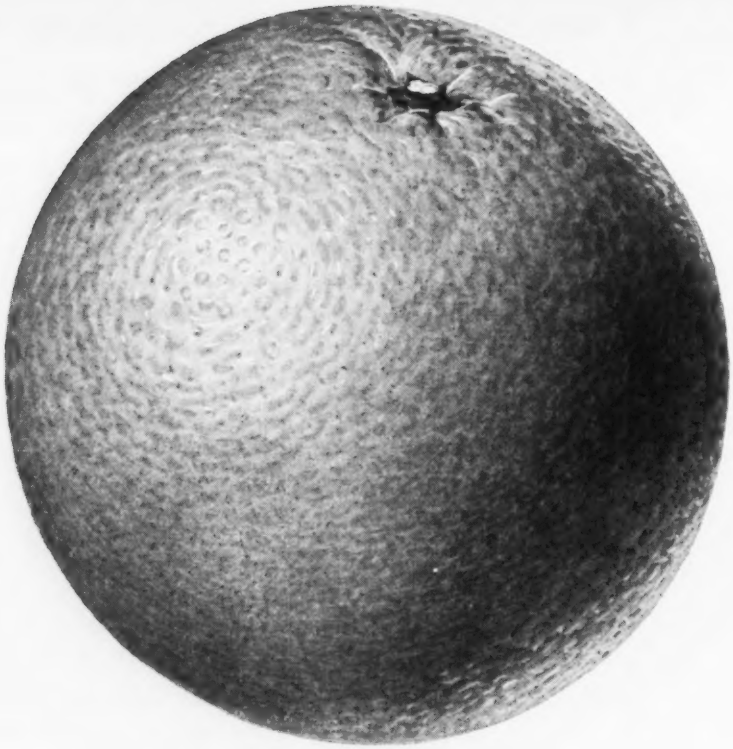
Departments

Western Outlook: News and Statistics 27
Westerners at Work 76
The West on Its Way 70
Trade Winds 78
New Equipment 66
Helpful Literature 68
Book Reviews 69

Advertiser's Index 82

Front Cover

More metal produced in the West as the area's population and industry grow. Scene shows Anaconda Copper Company's four new electric furnaces at Anaconda, Montana. Here they concentrate ferro-manganese from relatively low grade manganese carbonate ore shipped from the mines at Butte.



Important to Western steel

Imagine a steel plant surrounded by orange groves . . . where steel workers are spare-time farmers, own good homes, send their children to fine schools.

That's a literal description of Kaiser Steel's Fontana plant. Add to it clean working conditions, safe practices, modern equipment . . . and a human relations record unsurpassed in the industry . . . and you have the answer to why experienced steelmakers come to Fontana, and remain . . . *satisfied employees.*

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It's good business to do business with

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PROMPT, DEPENDABLE DELIVERY AT COMPETITIVE PRICES • plates • continuous weld pipe • electric weld pipe • hot rolled strip • hot rolled sheet • alloy bars • carbon bars • structural shapes • cold rolled strip • cold rolled sheet • special bar sections • semi-finished steels • pig iron coke oven by-products • For details and specifications, write: **KAISER STEEL CORP., LOS ANGELES, OAKLAND, SEATTLE, HOUSTON, NEW YORK**

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can cost you less!

Unless your feeders have been figured in *aluminum*, they haven't been figured *low*. Get prices both ways—aluminum and copper. The savings possible with aluminum may surprise you.

For prices, call one of the manufacturers listed below.

For copy of "Questions & Answers About Insulated Aluminum Conductors", call your nearby Alcoa Sales Office, or write ALUMINUM COMPANY OF AMERICA, 1781D Gulf Building, Pittsburgh 19, Penna.

Insulated **Aluminum Conductors**

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- Collyer Insulated Wire Company
- Crescent Insulated Wire & Cable Company
- General Cable Corporation
- The Okonite Company
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THIS MAN HAS DONE A LOT OF THINKING ABOUT YOUR PROBLEMS!

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This message published by one of the recognized companies underwriting modern group insurance plans —
CALIFORNIA-WESTERN STATES LIFE INSURANCE COMPANY

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Like this 16,000-lb. casting — it was made with a hard chrome facing on the inside for an 18" Centrifugal Dredge Pump. The casting and machining, and the chrome spraying were all done in our plant . . . the largest completely integrated machinery manufacturing plant in the West.

Castings from 1,000 pounds to 35,000 pounds.

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Roller Chains and Sprockets

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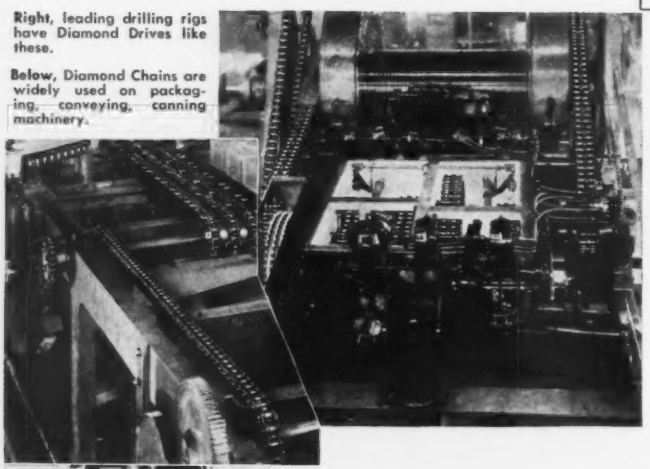
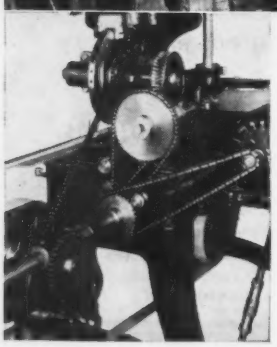
Available Promptly Through Nearby DISTRIBUTORS

Right, leading drilling rigs have Diamond Drives like these.

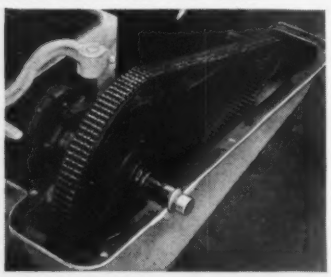
Below, Diamond Chains are widely used on packaging, conveying, canning machinery.





At left, ½ H.P. single-strand Diamond Chain drives.

Below, typical high-speed electric motor drive.



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Has Hundreds of Safety Applications

Light and Strong—Requires No Maintenance

A.W. ALGRIP ABRASIVE Floor Plate is a completely new and revolutionary product. It's made by rolling tough abrasive grain, the same type used in grinding wheels, as an integral part of the upper portion of steel floor plate. This results in a strong, tough, but resilient floor plate that's truly non-slip even on steep inclines.

Wet or dry, ALGRIP'S abrasive particles grip men's feet and prevent costly slipping. ALGRIP requires no maintenance, is easy to clean, is not affected by heat or oil, and because it is rolled steel it is stronger than other abrasive flooring and can withstand severe abuse without cracking.

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Get complete information about this truly non-slip floor plate today. Write for a FREE copy of Catalog L-32

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ABRASIVE ROLLED STEEL FLOOR PLATE

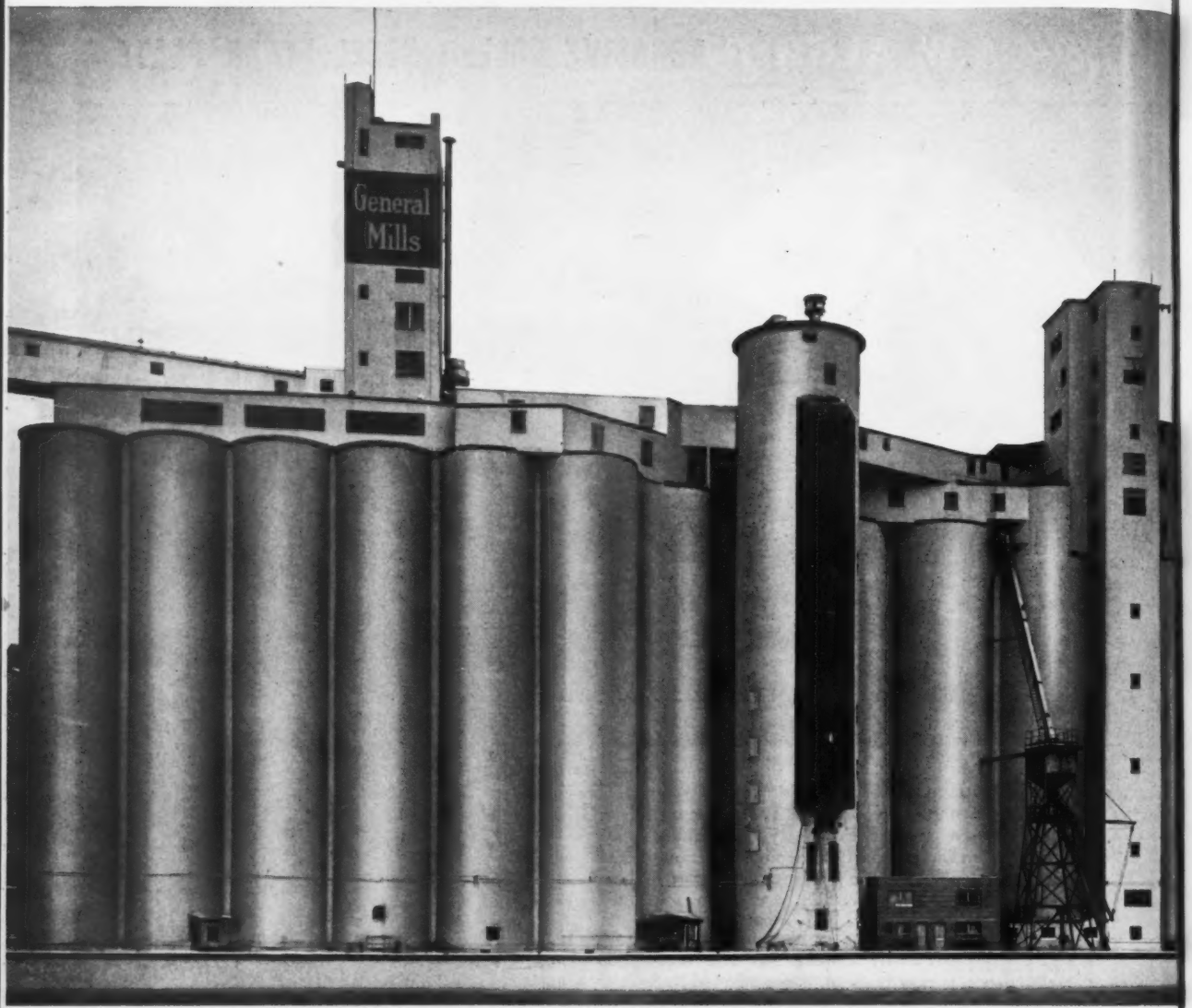
Product of

ALAN WOOD STEEL COMPANY

Conshohocken (3), Pa.

Other Products:

Weather Doesn't Recognize the *40-Hour Week*...



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...*But* YOU CAN PREVENT THIS ROUND-THE-CLOCK DESTRUCTION OF IMPORTANT INDUSTRIAL BUILDINGS

General Mills' huge grain elevator at Buffalo, New York is another outstanding example of the milling industry's confidence in Dum Dum Masonoc's ability to afford long-term weather protection to building surfaces.

Dum Dum Masonoc, now protecting many of America's most important milling buildings, seals cracks, stops moisture seepage, prevents the need for costly reconstruction. If your buildings are "weatherworn," it's time to write for full information on Dum Dum Masonoc. Names of experienced appliers in your locality sent upon request.

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Dum Dum MASONOC OFFERS THESE 4 BIG ADVANTAGES

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Applied 1/16" to 1/8" thick, provides extra insulation and protection.

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Expands and contracts with ordinary movement of building surface.

FILLS CRACKS—
Eliminates the chief source of destructive surface deterioration.

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If outer surface is bruised or broken, the under-surface hardens at point of abrasion.

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Dum Dum MASONOC FOR CONCRETE, STUCCO, MASONRY SURFACES

Throughout the 11 Western States...

See How BUTLER® STEEL BUILDINGS Help Industry Build Better, Faster, for Less!

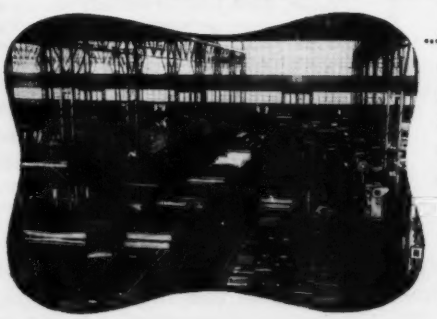
Steel warehouse, Spokane, Wash., is typical of Butler Buildings used by Western industry.

. . . and in Your Own Industry See How BUTLER Can Serve You

Fire-safe and weather-tight, permanent Butler Steel Buildings can be adapted to any need . . . save you up to 50% investment. Your local Butler distributor will give you complete sales and erection service. See him soon!

This photo shows roomy interior of Spokane warehouse pictured above.

Made in Richmond, California, BUTLER STEEL BUILDINGS...



...are the proud result of more than 35 years' experience and skilled craftsmanship. (Note efficient layout of machinery and precision equipment used by Butler in its plant at Richmond).

Manufacturing and processing operations like this packing company at Santa Cruz, Calif., are housed in Butler Buildings throughout Western States.

BUTLER MANUFACTURING COMPANY

Richmond, California

Kansas City, Mo. Galesburg, Ill. Minneapolis, Minn.

TEAR OFF AND MAIL THIS COUPON TODAY!

Address: Dept. WI24, Shipyard #2, P. O. Box 1072, Richmond, Calif.

Send name of distributor and information about Butler Steel Buildings, to be used for

INDIVIDUAL _____

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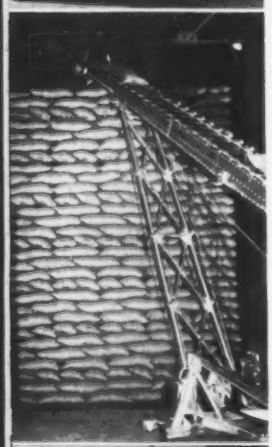
CITY _____ ZONE ____ STATE _____

WESTERN INDUSTRY

MATERIALS and FREIGHT HANDLING Theme of Our May, 1950 issue



The phenomenal growth of industry in the West is well known—but have you thought how much more important is the handling of materials to a rapidly growing industry, than to more static establishments? In 14 of the Nation's 16 major industries, the growth of industry in the West exceeded the national average (by 20% to 66% in 8 of the 14), according to U. S. Dept. of Commerce. That's why it will pay you to tell your story in our May MATERIALS and FREIGHT HANDLING issue.

ARTICLES WILL HELP BOTH READERS AND ADVERTISERS

Like all WESTERN INDUSTRY issues, the editorial material in this May Number will provide brass-tack "why" and "how" information aimed to help your prospects solve their materials and freight handling problems. In our 1949 MATERIALS HANDLING issue we carried 13 articles on this subject. To give you some idea of the phases included, here are 5 of the 13 titles:

1. **"High Speed Towing by the Sub-floor Method"**
2. **"Standards for Judging Whether Palletizing Will Pay Out"**
3. **"System Cuts Package Handling Costs from 8.4¢ to 1.8¢"**
4. **"Take an Overall View of Your Materials Handling Problem"**
5. **"Tramrail Effects Savings in Repair and Service Shop"**

1950 will be a repeat performance so far as thorough coverage is concerned, and you know that such articles, well prepared, naturally earn high readership and provide an interested, ready-made audience for your advertising.

LOOK AT THIS RESPONSE!

"You ran an article on our New Dual Newsprint Handling Device. The effect of this article was outstanding. Inquiries from Italy, England, Canada, and numerous eastern cities have been received. Furthermore, each day brings more correspondence from cities throughout the country and Canada."

"I thought that you might be interested in the reactions of our local and national sales force to your fine article which analyzed in careful detail the Sherwood Swan operation in Oakland."

"Directly from the article as published and from thousands of reprints, we established many fine prospective contacts and were aided in the closing of a considerable volume of business."

"My compliments to you in that your article was so complete from a factual standpoint that it has become one of our standardized field report Case Histories used to illustrate the advantages of RAPISTAN FLOW in like operations."

"Again, thank you, for not only our organization but many prospective users who have used this article as a guide to more efficient materials handling."

The materials-handling articles in the May, 1950 issue will be even better, we think, than those that evoked these comments.

Join the 61 alert manufacturers who already have reserved space. Back up your branch offices, distributors and salesmen, with dominant space in this big, interest-packed Materials and Freight Handling number. Don't miss this opportunity to cash in on the most active materials handling market in the country. Mail the coupon *today* and be sure of the best available position. Be sure to mention size of space and colors.

CARRY YOUR SALES GOSPEL TO OVER 9,000* ACTIVE BUYING FACTORS

WESTERN INDUSTRY's effective circulation, as of January, 1950, passed the 9,000* mark. By effective circulation, we mean 9,000 copies mailed to those who actively manage and do the buying, specifying and approving of purchases in Western plants. To reach these 9,000 buyers reserve space for your sales message in our May MATERIALS and FREIGHT HANDLING number TODAY. First forms close April 5th; final forms with complete plates, April 12th.

*There's no padding in this 9,000. It does not contain copies to advertisers, agencies, exchanges, samples, or advertising prospects.

NO INCREASE IN RATES

You pay no premium for this special, extra-interest-packed May issue. Our regular rates apply . . .

Out April 25—Final Forms Close April 12

Take advantage of the May MATERIALS and FREIGHT HANDLING number NOW. Wire or mail your space reservation TODAY, stating ad size and whether color or bleed. Final forms close April 12. If further extension is necessary, wire or air mail us before that date.

ADVERTISING RATES

(Based On Total Bulk Space Used in 12 Months)

Full Page Space			
24 pages or more			$185.00 per page
12 to 23 pages			200.00 per page
6 to 11 pages			225.00 per page
3 to 5 pages			240.00 per page
Less than 3 pages			255.00 per page
Fractional Space	1 time	6 time	12 time
2/3 page	$170.00	$160.00	$150.00
1/2 page	127.50	120.00	112.50
1/3 page	85.00	85.00	80.00
1/4 page	63.75	63.75	60.00
1/6 page	42.50	42.50	42.50
1/8 page	31.88	31.88	31.88

Color Charges	1 page	2 pages facing
Red, orange or yellow	$55.00	$80.00
Other colors	65.00	90.00
Metallic colors	70.00	95.00

Bleed Borders		
Bleed top, bottom or outside	20% extra	15% extra
Gutter bleed	No charge	No charge

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Inserts billed at earned black and white page rate. No extra charge for backup either single leaf or spread (4-page form).

Composition—No charge.

Preferred Positions (Non-cancellable).

Page facing second cover	10% premium
Page facing contents page	20% premium
Page facing first editorial	20% premium
Page facing first reading	20% premium
Any guaranteed regular position (other than preferred)	10% premium

NOTE: Island ½-page positions (4⅝" x 7½") cost 20% extra.
Write for availability of cover positions and rates.

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Space May Be Used in Any of the Following Forms:

Bleed full page (trim size)	8¼ in. wide x 11¼ in. deep
Requires a plate size of	8⅝ in. wide x 11½ in. deep
Standard full page	7 in. wide x 10 in. deep
Two-thirds page	4⅝ in. wide x 10 in. deep
Half page	7 in. wide x 4⅞ in. deep
or	3 7/16 in. wide x 10 in. deep
or	4⅝ in. wide x 7½ in. deep
Third page	2¼ in. wide x 10 in. deep
or	4⅝ in. wide x 5 in. deep
Quarter page	7 in. wide x 2 7/16 in. deep
or	3 7/16 in. wide x 4⅞ in. deep
or	4⅝ in. wide x 3 7/16 in. deep
Sixth page	2¼ in. wide x 4⅞ in. deep
Eighth page	7 in. wide x 1 7/16 in. deep
or	3 7/16 in. wide x 2 7/16 in. deep

Inserts
Should be shipped untrimmed measuring 8¾" by 12" to trim to magazine size 8¼" by 11¼", allowing ⅜" for gutter bleed. If backup required, ship to us c/o Ben Franklin Press, Inc., 500 Sansome Street, San Francisco 11. If no backup required, ship to c/o William S. Millerick Co., 545 Sansome Street, San Francisco 11. Stock preferably not heavier than our cover stock.

Halftone Screens
110- or 120-line preferred.

Closing Dates
First forms close on 5th of month preceding issue date, final forms on the 12th preceding issue date.

Plates
Plates should be shipped mounted, and with proper mortise. All plates not called for in 14 months will be destroyed.

Classified Advertising $8.50 per column inch.

WESTERN INDUSTRY

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New Market & Media Data Units Available. Send for a copy NOW.

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Telephone Georgetown 374

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CHICAGO—A. C. Petersen, District Mgr.
3423 Prairie Ave., Brookfield, Ill.
Telephone Brookfield 532

SAN FRANCISCO—R. C. Williams, District Mgr.
609 Mission St., San Francisco 5, Calif.
Telephone YUkon 2-4343

LOS ANGELES—Jerome E. Badgley, District Mgr.
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CASH IN ON THIS MARKET NOW!

Western Industry: Yes, I want

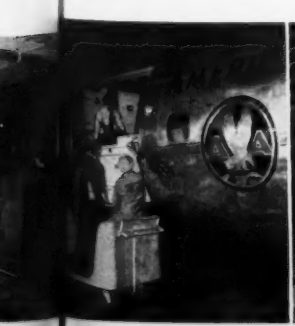
- ☐ 1949 Materials Handling Issue
- ☐ 1950 Annual Review and Forecast
- ☐ Additional information and your District Manager to arrange an appointment with me.

NAME..... TITLE.....

COMPANY.....

STREET.....

CITY..... ZONE..... STATE.....



88,000 HOURS

of trouble-free turbine lubrication

with SHELL TURBO OIL

And at last inspection the oil was still in "like new" condition... reports a well-known power company

TYPICAL APPLICATIONS
Where Shell Turbo Oils Can Save on Long Term Lubrication Costs

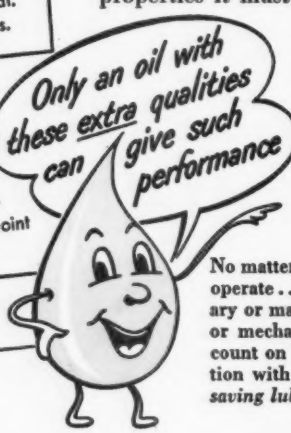
STEAM TURBINES—Direct connected, geared, pressure circulation, ring oiled

HYDRAULIC TURBINES—Vertical, horizontal. In governor systems, thrust and guide bearings.

HYDRAULIC SYSTEMS—In machine tools; hydraulic presses and other oil-hydraulic power equipment.

BEARINGS—Plain and anti friction—where severe conditions or other factors point toward use of oxidation resistant oil.

Also recommended for extra heavy duty air compressor lubrication



THE ABOVE is not just an isolated case. Other power companies, shipping companies, operators of all kinds of turbines testify to amazingly long, trouble-free lubrication from Shell Turbo Oil. And to significant savings in operating costs.

Shell was first to see the need for a *completely* fortified turbine lubricant . . . first to develop an oil with the *extra* properties it must have to give such service . . .

Non-Sludging: In service, that means piping, coolers, reservoirs stay clean.

Rust-Preventing: Governors are fully protected, oil systems stay free of deposits.

Non-Foaming: To maintain sensitive governor operation . . . to eliminate all the troubles that excessive foaming can cause.

No matter what type of turbine you operate . . . steam or hydro, stationary or marine, in power generation or mechanical drive . . . you can count on long, trouble-free lubrication with Shell Turbo Oil. *Money-saving lubrication.*

SHELL

This light used to fade!

The Problem: To find a way to keep the reflector surface on fluorescent lights from yellowing, so that the maximum amount of light would always be maintained.

The Solution: Industrial Finish Engineers developed a special mar-proof, baked finish that keeps its original whiteness and light reflectivity. Result: Customers get more light from fluorescent lights, with less electricity.

Learn what Industrial Finish Engineers can do for your sales!

Here you have just a few fast examples of how Industrial Finish Engineering can and has brought more sales-appeal to many products.

Let it do the same for your product.

Find out if it can improve your sales—cut your manufacturing costs—help expand your market.

Any Industrial Finish Engineer can tell you. Consult one, today.

For the Finish Industry has technical ability to make finishes equal to the purpose for which each product is bought. Remember, most of your customers *start buying with the finish in mind.*

The better the finish—The better the buy!

© 1950, National Paint, Varnish and Lacquer Association, Inc., Washington, D. C.

Problem: To find a finish for typewriters and other office equipment that would not reflect light and glare.

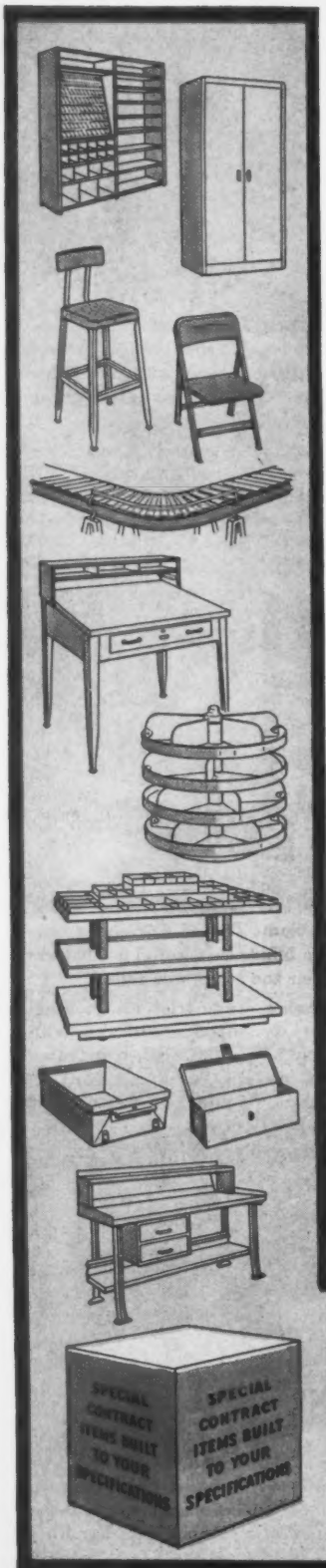
Solution: Industrial Finish Engineers developed a "wrinkle" finish that absorbs light—cuts down glare—is easily cleaned—and is not a dust catcher.

Problem: To find a finish for venetian blinds that would not flake off when the blind was raised.

Solution: Industrial Finish Engineers developed a finish that withstands impact of blinds being raised and lowered. It wipes clean . . . withstands rain and sun baking.

Problem: To find a finish for telephone receivers that would resist perspiration from user's hand.

Solution: In their laboratories, Industrial Finish Engineers developed a finish that was perspiration-resistant—withstands impact when person drops receiver on hook—is easily applied.



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You pay no more, often less, for the

Extra Quality in LYON Steel Equipment

. . . whether it's a regular catalogued item or a special contract item made to your specifications.

LYON METAL PRODUCTS, INCORPORATED

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Shipment from Pacific Coast Points

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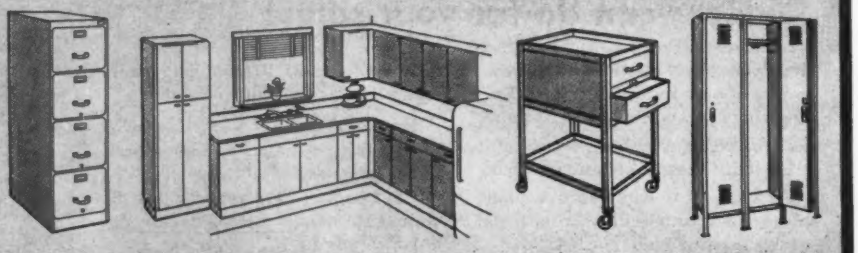


A PARTIAL LIST OF LYON PRODUCTS

- Shelving
- Lockers
- Wood Working Benches
- Economy Locker Racks
- Kitchen Cabinets
- Display Equipment
- Hanging Cabinets
- Welding Benches
- Filing Cabinets
- Cabinet Benches
- Folding Chairs
- Drawing Tables
- Storage Cabinets
- Bench Drawers
- Work Benches
- Drawer Units
- Conveyors
- Shop Boxes
- Bar Racks
- Bin Units
- Tool Stands
- Service Carts
- Hopper Bins
- Parts Cases
- Flat Drawer Files
- Tool Trays
- Desks
- Stools
- Tool Boxes
- Sorting Files
- Revolving Bins

IN OUR MAILBOX

A Bonded Economy

Editor, Western Industry:

Having been away from Geneva for business reasons almost two-thirds of the month of January, I have only recently found the time to read your January issue of *Western Industry* which you have devoted to your annual "Review and Forecast." Please accept my compliments for having presented in an interesting way, much information which should be of value to a substantial majority of your readers.

May I suggest that in the preparation for your next annual "Review and Forecast," you might consider the advisability of including statements to be contributed by a number of industrial and business leaders of the West. These statements might take the form of either interviews or of prepared articles with sufficient time given in advance for careful preparation and editing. It seems to me that this addition might strengthen the "Review and Forecast" since apparently much of the information contained in the present issue comes from organizational and governmental sources.

Answering your question concerning unity among industries in the West, it is my considerate opinion that this is an important subject, since Western States do make up a region of our country peculiarly important by and to itself. It is important likewise, however, in stressing the importance of Western unity, to emphasize the inseparable relationship between the West and the overall economy of the country.

I take the liberty of sending along with this letter an article which appeared recently in the Salt Lake Tribune under my signature, and which you may find of sufficient interest to peruse since it touches upon the particular subject just mentioned.

May I take this opportunity to extend to you, beyond and aside from this present "Review and Forecast" issue, my best wishes for continued success in the work that you and your publication are doing for Western industry and business.

W. MATHESIUS, President,
Geneva Steel Company,
Geneva, Utah.

* * *

Corrected

Editor, Western Industry:

In the January issue of *Western Industry*, page 54, is a picture of Irwin-Lyons' vessel loaded with packaged lumber, which is tied with our 8 gauge galvanized round steel strapping wire. In describing the load in the article they refer as follows: "Each package unit of lumber has 2500 to 3000 feet bound on each end with *half inch* galvanized wire."

We would like to call your attention to the fact that this description is inaccurate, in that the packages shown in the illustration are tied with our 8 gauge galvanized Gerrard Hi-Ten round steel strapping.

We are very pleased to see the illustration and the publicity accorded to this load, but would appreciate it if the description were corrected.

E. L. WILLIAMS,
Western Division Manager,
Gerrard Steel Strapping Co.
Seattle, Washington.

More on page 21

EDITORIAL COMMENT

The Hard Way Is the Easiest

TWO significant examples of the ease and promptness with which private industry begins to adjust itself to changed conditions when left to its own devices can be found in our Western economy today. They are striking contrasts to the slow, clumsy, dilatory and costly manner in which the governmentally managed farm operations perform under similar circumstances.

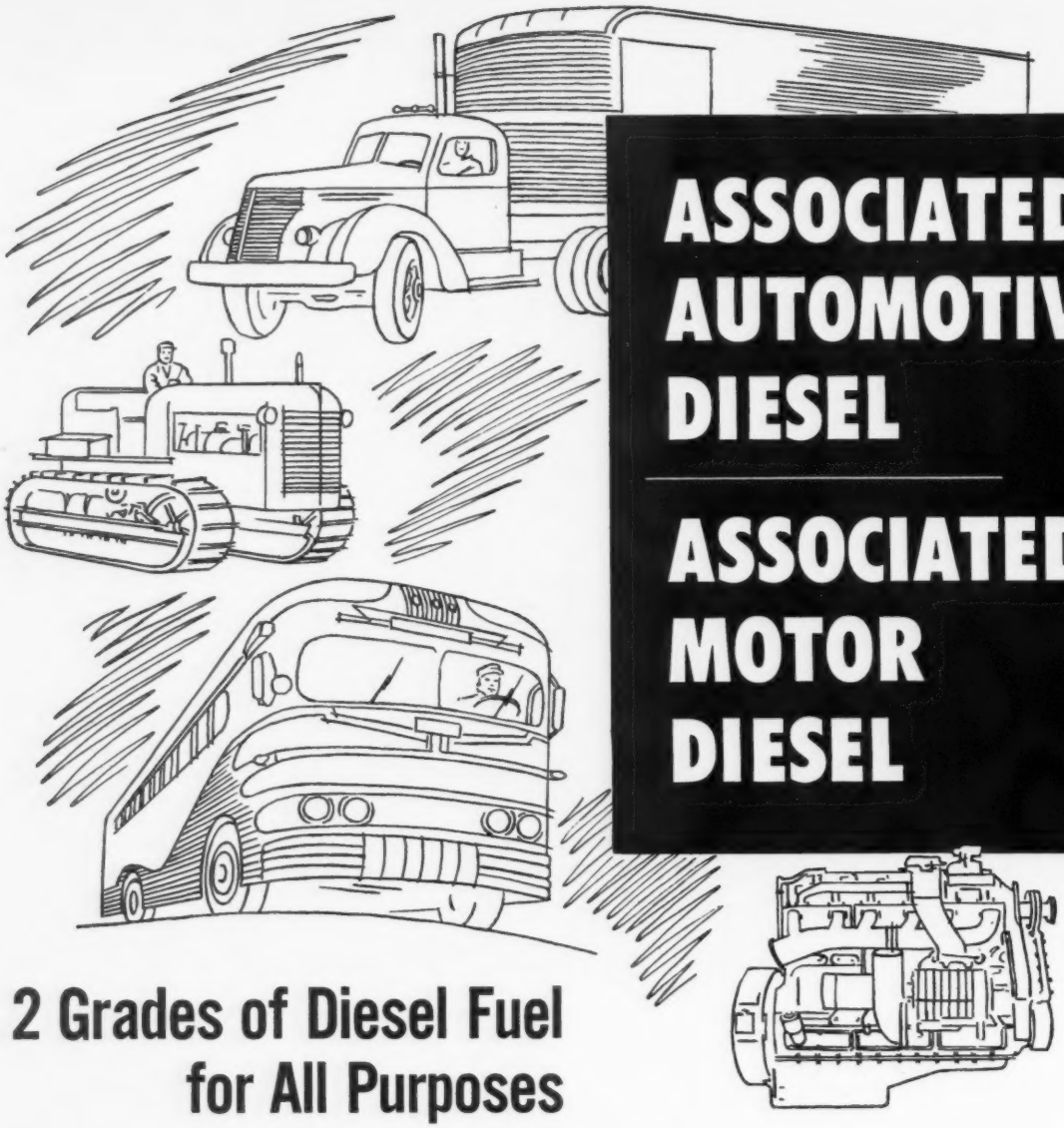
The first is California petroleum, where conditions changed almost overnight from scarcity to oversupply, with the dieselization of railroads one of the major causes. There were no government props to hold the price up, no Commodity Credit Corporation which could be loaded up with unwanted heavy crude. Instead, the refiners had to discourage drilling and look for markets where the surplus crude could be dumped. As a result there have been record-breaking shipments out of southern California. Very obviously heavy losses were incurred, and probably there was much jostling between refiners, but supply is on its way to being brought into line with demand, which is the main thing.

Our second instance is California cling peaches, the backbone of canning operations. Confronted with an inevitable oversupply this season, the California Canning Peach Association has come up with a proposal that at thinning time, when the official crop estimates are made, the growers and processors join in estimating the market potential. Then the growers simply cut supply to demand by removing the surplus tonnage on the trees through green drop or thinning. At this writing canners had agreed to the plan, and the proposal indicates clear thinking on the part of both growers and canners.

Contrast these two examples with the government-supported crops, where cotton, wheat, potatoes and other commodities are running out of our ears, enormous further public financial outlay inevitable, and no feasible method by which production can be brought back to a sensible basis. The easy way to protect farmers from financial loss has turned out to be the hard way, and we venture to suggest to business enterprises that easy financing obtained from the RFC will bring penalties far outweighing the apparent present benefits.

Real Safety First

GREATEST of all safety devices is a safe man. He is the man who takes care of himself, and demands that his associates and his employer do their part also. In developing safe men in all ranks of employment the record of the railroads is outstandingly good. It seems to have become tradition for each one to carry his portion of the burden of responsibility. Consequently we cannot see where the bills now before Congress, intended to give the ICC further power to regulate railroad safety, will do anything but tend to substitute inflexible patterns set up at Washington for the existing self-reliance which motivates the railroads. The ICC already has considerable power to enforce safety, and the proposed measures seem to give the ICC a blank check. Experience with various government departments indicates that when the limits are taken off their power the tendency is to build up more control for the sake of control, because they do not know where to stop.



ASSOCIATED AUTOMOTIVE DIESEL

ASSOCIATED MOTOR DIESEL

2 Grades of Diesel Fuel for All Purposes

ASSOCIATED AUTOMOTIVE DIESEL FUEL is a distilled, highly refined, light colored product made from selected crudes. It is a more volatile fuel than Associated Motor Diesel Fuel and has excellent ignition quality and high cetane. It is especially recommended for General Motors Diesel engines, series 71, Allis Chalmers tractor engines and Gray Marine Diesel engines.

ASSOCIATED MOTOR DIESEL FUEL is an outstanding fuel for high speed diesels. It is totally distilled from selected crude, and specially treated for diesel quality. It is free of suspended contaminants and free-flowing with carefully controlled pour point and flash point—gives complete burning for a cleaner engine—more power. Check its easier starting and smoother idling. Its power will prove itself in better performance. It is ideal fuel for such popular engines as Buda, Caterpillar and Cummins.

Order your trial supply of Associated Automotive Diesel Fuel or Motor Diesel Fuel *now*. They are tops for all diesel uses. Let's Get Associated!

Call your Associated Representative for expert help on any lubrication or fuel problem

TIDE WATER ASSOCIATED OIL COMPANY

MAIL BOX

Continued from page 19

Comprehensive and Accurate

Editor, Western Industry:

We enjoyed reading your Annual Review and Forecast.

This is a particularly useful issue to us because in no other way could we get such a comprehensive and accurate view of potential business in the West.

H. B. BUTLER
W. A. Palmer Films, Inc.
San Francisco

* * *

One for Each

Editor, Western Industry:

As an indication of the value we place upon your annual Review and Forecast Number, I think you will be interested to know that we have ordered copies of the magazines for each of the resident managers of our mills and converting plants. Of particular interest to us is the excellent story by Mr. Harold Olson regarding the job of forest management which is being done by private timber owners on the Pacific Coast.

R. G. SHEPHERD,
Executive Secretary to the President, Crown Zellerbach Corporation, San Francisco

* * *

Muni Ins and Outs

Editor, Western Industry:

Regarding your editorial on the subject of Municipal Railway advertising appropriations (February issue), we are continuing our fight for more substantial appropriation and editorial support such as yours will be of assistance to us. Incidentally, at the time we ran car cards *inside* transit vehicles, we were compelled to take this space because it was all then available to us within our means.

We have since been able to transfer a small fund, and, with the generous aid of the transit advertising which has exclusive transit advertising rights on our properties under contract, now have under preparation 600 *outside* traveling displays. These should appear shortly.

TOM IRWIN,
Director, Bureau of Public Service, Public Utilities Commission, City and County of San Francisco

* * *

Back Home in Indiana

Editor, Western Industry:

Thank you so much for your letter of January 24 in which you enclosed copies of comments you got relative to the recent editorial on the changing attitude toward federal reclamation projects in the West.

It is obvious that you touched on a subject fraught with truths, half-truths and untruths. However, I commend your paper for the very courageous and economically sound position you are taking relative to this development.

We face the same kind of problem back here in the Midwest. Our federal agencies are ever extending their services (and their subsidies), and have now reached the point that they extend their programs for the mere sake of extension. That is not good.

E. L. BUTZ,
Head, Department of Agricultural Economics,
School of Agriculture,
Purdue University,
Lafayette, Indiana.

IT'S TRIPLEX

for toughness... and economy

especially in tonnage lots

SCREWS

CAP Sizes to 1" x 8" U.S.S. or S.A.E. Hex, flat, button or fillister heads.

SET Sizes to ¾" x 4" U.S.S. threads. Square heads, cup and oval points.

Buying threaded fasteners in tonnage lots can often lead to considerable savings—especially if you order from TRIPLEX. You get top quality and unexcelled holding power from TRIPLEX . . . without paying premium prices.

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MACHINE
Sizes to 1"x60". Square, hex or countersunk heads.

LAG
Sizes to ¾" x 20". Standard square heads, gimlet points.

STEP
Sizes to ½" to 6". Standard heads, finished points.

STOVE
Sizes to ½" x 6". Round, flat or oven heads.

CARRIAGE
Sizes to 1" x 60". Standard round or special heads.

PLOW
Sizes to ¾" x 6". American and Manufacturers Standard heads.

NUTS

SEMI-FINISHED
American Standard heavy and light, full and jam sizes to 1 ¼". Milled from the bar.

CASTELLATED
American Standard light castle hexagon. Sizes to 1 ¼".

When you're ready to order threaded fasteners — write or wire for TRIPLEX prices.

The **TRIPLEX SCREW** *Co.*
5403 Grant Ave. Cleveland 5, Ohio

TRIPLEX *for* **TOUGHNESS**
CAP AND SET SCREWS · BOLTS, NUTS AND RIVETS

T5X CUTS MAINTENANCE COSTS ON CONSTRUCTION EQUIPMENT

Contractors operating Diesel and gasoline powered equipment use the famous purple oil to keep repair costs at a minimum

1. Performance reports from western construction men *prove* that T5X oil gives *far* better engine protection. For example, a Seattle contractor started testing T5X two years ago in a 6-125 Waukesha engine on dump-truck service.

2. A recent check on the engine found the crankcase clean and free from sludge. Bearing wear was *immeasurable!* Top cylinder wall wear was only .003 of an inch! Ring wear was slight! This owner* now considers T5X the superior lubricant for *all* of his equipment.

*Name available upon request

3. What is this remarkable *purple* oil? It's a highly refined, 100% paraffin-base oil from highest quality base stock. It's a fully compounded, *detergent-type* oil with a distinctive purple color developed from an exclusive ingredient which helped give the oil its amazing stability.

4. The powerful combination of additives in T5X enables this great purple oil to do an outstanding job under *severe* conditions. For T5X reduces oxidation; increases bearing protection; and provides *greater cleansing action*—along with thorough protection against wear.

T5X

Contact your local Union Oil Representative for full information on T5X. Or write Sales Department, Union Oil Company, Los Angeles 14.

UNION OIL COMPANY 76 **OF CALIFORNIA**

CALENDAR OF MEETINGS

March 28-31—Intermountain Logging Conference, at Hotel Davenport, Spokane. Contact Charles Keim, Kalispell, Montana.

April 12, 13—Governor's Industrial Safety Conference, at Los Angeles. Contact Department of Industrial Relations, Division of Industrial Safety, 965 Mission St., San Francisco 3. Phone EX 2-8302.

April 17-19—Pacific N.W. Bakers Association, Multnomah Hotel, Portland, Ore. Contact J. C. Crawford, Weatherly Bldg., Portland, CA. 6450.

April 20, 21—Olympic Logging Conference, Empress Hotel, Victoria, B. C.

May—Western Traffic Conference, at Portland, Ore. Contact F. W. Ashton, 408 Oak Lane, San Gabriel, Calif.

May 11-12—American Petroleum Institute, Production Division, at Los Angeles.

May—N. A. M. Oregon Industrial Leadership Conference, at Portland. Contact Jack Shields, BR. 2637, N.A.M., Pacific Building.

May 22-26—Western Conference on Apprenticeship, at Seaside, Oregon. Contact Convention Committee, Chamber of Commerce, Seaside.

June 2-3—Pacific Coast Conference of Controllers Institute of America, at Ambassador Hotel, Los Angeles. General Chairman is Rudolph Ostengaard, Assistant Vice President, California Bank.

June 12-15—National Association of Building Owners and Managers, at Olympic Hotel, Seattle, Washington. Contact Andrew Steers, president, Metropolitan Building Co., Seattle.

June 19-30—Institute of Northwest Resources, sponsored by Oregon State College at Corvallis. Dr. F. R. Zeran is director of the summer session.

June 25-29 — Forest Products Research Society, at Multnomah Hotel, Portland. Contact Edward G. Locke, president, AT. 6171, U. S. Forest & Range Experiment Station, or C. W. Richen, BR. 6481, Housing Chairman.

June 29-July 1—National Industrial Advertisers Association national conference, at Hotel Biltmore, Los Angeles.

July 21-22—Pacific Society of Printing House Craftsmen, Multnomah Hotel, Portland, Ore. Contact Rudolph Ernst, Metropolitan Printing Co., 102 N.W. 9th Ave., Portland, BR. 2407.

August—Western Packaging Exposition, San Francisco.

August 28-31—Metal Mining Convention and Exposition at Salt Lake City. Contact Roy A. Hardy, Getchell Mine, Inc., Reno, Nevada.

Sept. 13-15—Pacific Electronic Exhibit (sixth annual) at Long Beach Municipal Auditorium. IRE coast convention concurrently.

Sure in all weather

Santa Fe freight service

Your freight moves by the clock—not by the weather—when you ship via Santa Fe.

Modern all-weather dispatching methods speed freight through terminals and a powerful fleet of diesel locomotives keep traffic rolling along the line to give dependable on-time arrival at destination.

Even Santa Fe's main freight routes are favored by nature for all-weather operations as these routes are without extreme changes in temperature or climate.

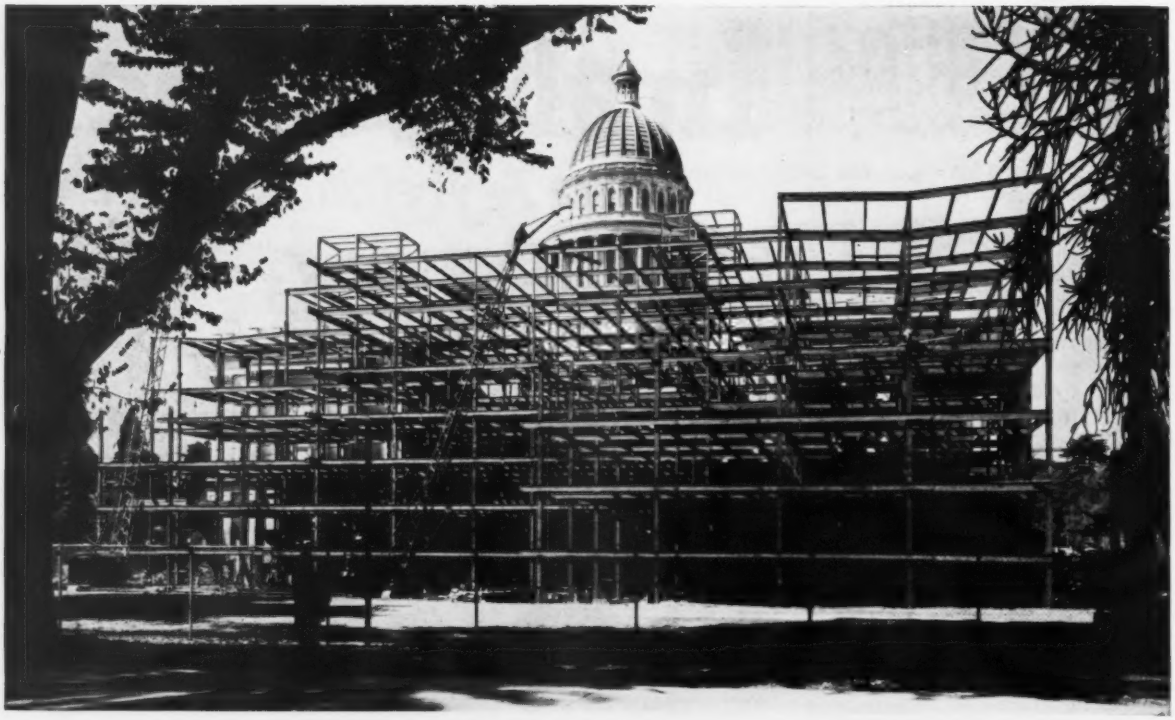
It pays to ship Santa Fe—*the dependable all-weather-way.* For information call your nearest Santa Fe freight representative.

F. H. Rockwell, *General Freight Traffic Mgr.*
Santa Fe System Lines, Chicago 4, Illinois

Santa Fe—all the way

Santa Fe

Steel for building



The framework for the new addition to the California State Capitol at Sacramento was fabricated and erected by Bethlehem Pacific. Over 2200 tons of structural steel were used.

Administration Building for the new Seattle-Tacoma International Airport at Bow Lake. This reinforced concrete structure contains 950 tons of Bethlehem Pacific steel reinforcing bars.

These two important buildings represent totally different approaches to problems of engineering and construction, yet they have one important material in common—steel. No matter what basic type of construction you select, Bethlehem Pacific can furnish all of the steel building materials required for the job.

This company operates three complete steel-making plants, three bolt-and-nut plants, and four fabricating works to serve the West.

★ BETHLEHEM STEEL ★

BETHLEHEM PACIFIC COAST STEEL CORPORATION

Sales Offices: San Francisco, Los Angeles, Portland, Seattle, Honolulu

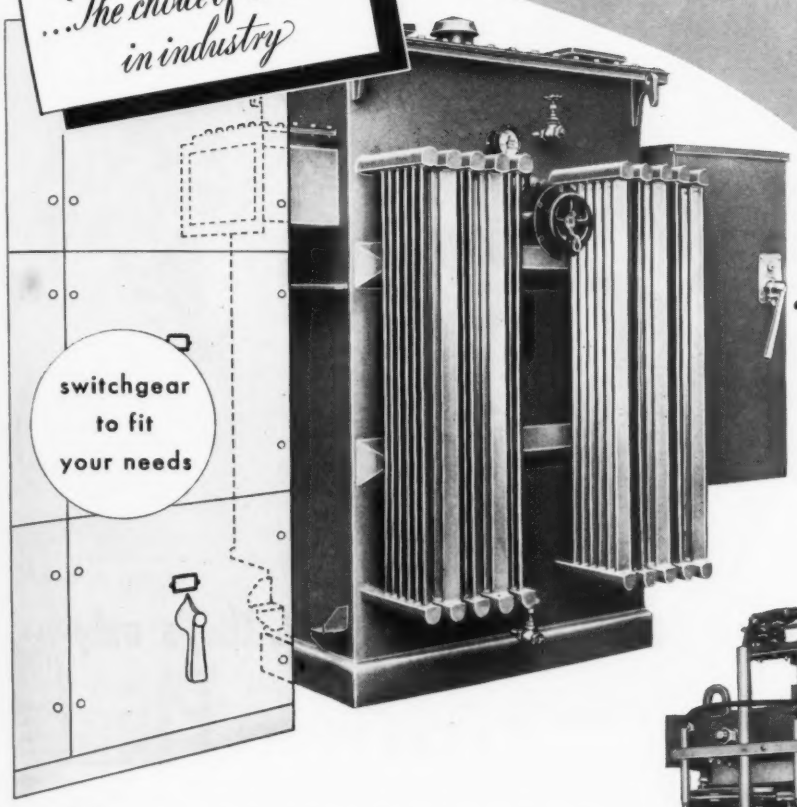
Steel Plants: South San Francisco, Los Angeles, Seattle

BETHLEHEM PACIFIC

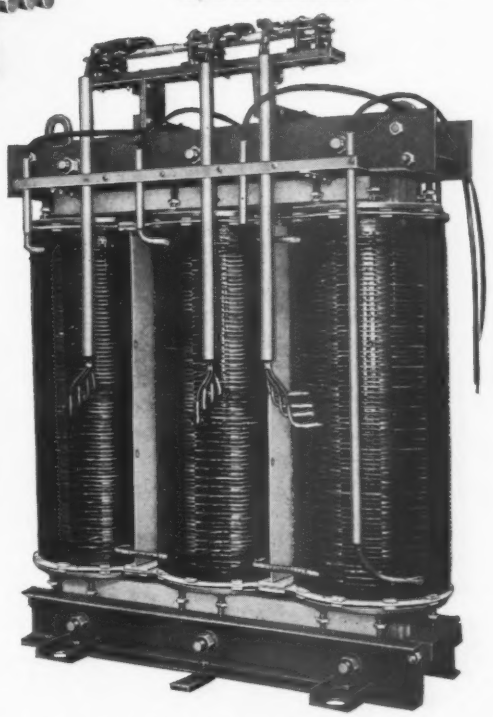
WAGNER TRANSFORMERS
...The choice of leaders in industry

Wagner Unit Substation Transformers .....

designed to meet your distribution requirements



Core and coil assemblies of Wagner unit substation transformers are designed by experienced engineers, and built and tested by skilled workers. Highest quality materials are used throughout, and meticulous attention to detail marks each step in their construction.



The transformer is the vital part of a load center distribution system. If the transformer fails, the entire system is dead whereas only part of the distribution system is affected by the failure of a switch or circuit breaker.

You can be sure of a dependable continuous flow of power from a Wagner transformer and you can be sure that it has been carefully designed to meet your distribution requirements.

Wagner unit substation transformers with incoming high voltage switch sections to meet your requirements, and with proper throats on the secondary side to connect to any make of switchgear, are available in the usual range of ratings up to 2000 kva. Our factory-trained sales engineers are well qualified to recommend the various combinations necessary to handle your unit substation requirements and they will be glad to give you immediate service.

Wagner unit substation transformers have been installed in all kinds of industrial plants including synthetic rubber, petroleum, steel, chemical, aircraft, automotive, paper, and many others. The importance of the transformer in a unit substation justifies calling in the Wagner sales engineer to help solve your load center problems.

Bulletins TU-13 and TU-56 describe the design and construction features that make Wagner liquid-filled and dry-type unit substation transformers outstanding.

Wagner Electric Corporation
EST. 1891

WAGNER ELECTRIC CORPORATION
6493 Plymouth Ave., St. Louis 14, Mo., U.S.A.

ELECTRIC MOTORS • TRANSFORMERS • INDUSTRIAL BRAKES
AUTOMOTIVE BRAKE SYSTEMS — AIR AND HYDRAULIC

BRANCHES IN 29 PRINCIPAL CITIES

T50-6A

"Taking care of small customers"... That's only one of the things we mean by Service Plus!

BARS · PLATES
STRUCTURALS · SHEETS
STRIP · REINFORCING BARS
* * *
STAINLESS
ALLOY STEELS
ALUMINUM
* * *
TOOLS · EQUIPMENT
MACHINERY

● Many of our customers are probably classified as "small business." We were delighted to find, through a recent survey, that the men in charge of these so-called small companies are well satisfied with the service they get from United States Steel Supply Company. More than one said, "You take care of the little fellow." We know every order, large or small, is important to the man who places it. And we do our best to meet his requirements in handling it. If you need steel, from stock or in special sizes, forms or specifications, call U·S·S Supply Company. Your order is as important to us as it is to you.

Service Plus is our promise of *extra* attention to your needs. It includes prompt delivery, large stocks of both standard and special sizes, and an unrivaled reputation for courteous attention to your every requirement. *Service Plus* means "You tell us and we'll do it if it's humanly possible."

WHEN YOU DEAL WITH US, YOU GET Service Plus!

UNITED STATES STEEL SUPPLY COMPANY

SAN FRANCISCO (1), P. O. Box 368, 1940 Harrison St., MArket 1-4988, ENterprise 1-0017 (Trans-Bay Only)
LOS ANGELES (54), P. O. Box 2826—Terminal Annex, 2087 E. Slauson Ave., LAfayette 0102
SEATTLE (4), Washington, Cor. 3rd So. & Lander St., ELliott 3014
PORTLAND (10) ORE., 2345 N.W. Nicolai St., CApitol 3283

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CLEVELAND · LOS ANGELES · MILWAUKEE · MOLINE, ILL. · NEWARK · PITTSBURGH
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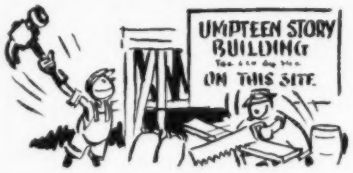
Sales Offices: KANSAS CITY, MO. · PHILADELPHIA · ROCKFORD, ILL. · TOLEDO · TULSA · YOUNGSTOWN

UNITED STATES STEEL

Year starts off with big rush in building permits; Records broken for oil shipments; cane and beet refiners in stiff competition; crop curtailment ahead for peaches; Aircraft sluggish; Furniture prospects good.



IN a planned economy, so we used to hear, everything fitted into a pattern and came out right. But in a free enterprise system everyone does things as they come to mind individually. So, just when there seemed to be a general industrial slowing down, construction of houses and public works of various kinds start out on a breakneck pace.

California building permits for January were 31% above a year ago, Oregon 210%, Utah 40.7% and Idaho 87.5%, and seven Western states total 27.8%, the *Daily Pacific Builder* reports. Washington, contrariwise, was off 53.8%, Nevada 30.3% and Arizona 5.1%. *Western Builder* shows $93,259,102 for the 25 leading construction jurisdictions of the West, as against $72,985,732 in January 1949. Most spectacular performer was Portland, with $6.3 million as against $1.8 million. Other notable records included Denver, $4.0 million compared to $2 million, Los Angeles $22 million against $16 million, San Francisco $5.2 million against $2.6 million, Sacramento $2,300,000 against $642,000, and San Bernardino, $1,335 against $688,000.

Part of this is residential construction, but a considerable portion is schools and other public buildings, for which money is just now becoming available. Similarly, the impact of some of the big federal works, such as dams, is just beginning to be felt also.

This situation accounts for part of the big upturn in lumber demand. Nationally, homebuilding activity in January was at the highest level on record for that month.

Two outstanding examples of free enterprise adjusting itself to situations, as compared with the cumbersome and wasteful operation of price supports and other "planned economy" systems of artificial enterprise,

Continued on page 29

MANUFACTURING EMPLOYMENT

Estimated Number of Employees

Source: U. S. Bureau of Labor Statistics and State Agencies

	Jan. 1949	Jan. 1950
Washington	157.7	148.4
Oregon	105.1	107.1
California	704.0	680.1
TOTAL PACIFIC	966.8	935.6
Montana	16.0	17.1
Idaho	16.2	17.2
Wyoming	5.6	5.9
Colorado	16.2	*
New Mexico	8.9	9.4
Arizona	14.6	14.5
Utah	25.7	25.9
Nevada	3.0	2.9
TOTAL MOUNTAIN	106.5	*

*Not yet available.

INSURED EMPLOYMENT

Under all programs: figures in thousands.
(From Social Security Board)

	Week Ending Jan 29, 1949	Week Ending Jan. 28, 1950
Arizona	10.1	7.9
Colorado	11.4	9.3
Idaho	12.2	13.3
Montana	9.6	13.4
Nevada	3.5	4.1
New Mexico	6.1	5.0
Utah	12.5	11.4
Wyoming	2.5	3.8
TOTAL MOUNTAIN	67.9	68.2
California	317.8	299.6
Oregon	58.1	64.7
Washington	77.6	95.2
TOTAL PACIFIC	453.5	459.5

Business Activity Indices

	1949 November	1949 December	1950 January
[1]Arizona	319.2	322.4	315.5
[2]California	220.5	221.5	218.1p
[3]So. California	268.1	276.7	274.1p
[4]Pacific Northwest	216.8p	....	....
[4]Puget Sound	210.5	....	....
[4]Inland Empire	190.7	....	....
[4]Lower Columbia	237.9p	....	....

1. Valley National Bank (Phoenix) index, based on a weighted composite of retail sales, agricultural income, and employment in mining, manufacturing and construction, seasonally adjusted. 1940=100.
2. Wells Fargo Bank & Union Trust Co. index based on the following components: Industrial production, freight carloadings, bank debits, department store sales (weighted 4, 3, 2, 1, respectively, and adjusted seasonably).
3. Security-First National Bank of Los Angeles index, based on the following components and weights, and adjusted seasonally: department store sales, 15; building permits, 5; Los Angeles bank debits, 20; residential city bank debits, 5; agricultural city bank debits, 5; industrial employment, 20; industrial power sales, 13; railroad freight volume, 6; telephones in use, 7; real estate activity, 4.
4. Index compiled by Bureau of Business Research, University of Washington. Basis of compilation not indicated.

p. Preliminary estimate.

BANK DEPOSITS

(In millions of dollars—adjusted)

Average of daily figures. All member banks in the 12th Fed. Res. District. Demand deposits, excluding U. S. Government deposits, cash items in process of collection, and interbank deposits.

	Jan. 1949	Jan. 1950
Net Demand Deposits	8,959	8,990
Time Deposits	6,086	6,248

BANK LOANS

Industrial, commercial and agricultural (In millions of dollars)

From weekly reporting member banks of Federal Reserve System in 7 Western cities: L.A., S.F., Portland, Seattle, Tacoma, Spokane and Salt Lake.

(Average of Wednesday reports)

February 1949	2,191
February 1950	1,980

FREIGHT

Cars of revenue freight, railroad carriers in 11 Western states

Compiled from Assn. of Am. R.R. weekly reports

	Carloadings		Received from Eastern Connections	
January	424,443	380,904	242,340	223,754

TRUCK TRAFFIC

(Number of commercial trucks entering state through border checking stations)

	CALIFORNIA		ARIZONA	
	1948	1949	1948	1949
January	12,510	15,633	18,746	23,613

CONSUMERS' PRICE INDEX

From Bureau of Labor Statistics
100 = 5 yr. Avg. 1935-39

	Los Angeles	San Francisco	Portland	Seattle	Denver
1949					
Aug. 15	166.8	.....	.....	170.8	.....
Sept. 15	167.1	173.0	.....	.....	.....
Oct. 15	166.5	.....	173.6	.....	164.6
Nov. 15	166.6	.....	.....	171.6	.....
Dec. 15	165.4	171.5	.....	.....	.....
1950					
Jan. 15	166.9	.....	173.8	.....	.....

WHOLESALERS' SALES

In thousands of dollars. Percentage changes are from corresponding month of preceding year. From Bureau of the Census.

MOUNTAIN

	Automotive Supplies	Change	Electrical Goods	Change	Furn. and house furn.	Change	Groc. and foods exc. farm. prod.	Change	General Hardware	Change
August	2,208	— 2	3,432	— 7	473	+35	.....	.....	2,212	— 3
September	820	—15	3,580	—16	490	+19	.....	.....	2,120	—12
October	1,050	—10	3,322	— 9	717	+ 3	.....	.....	2,266	—14
November	973	— 9	3,578	—19	1,032	+25	.....	.....	1,850	—19
December	827	— 1	3,713	—20	767	+10	.....	.....	1,868	—12

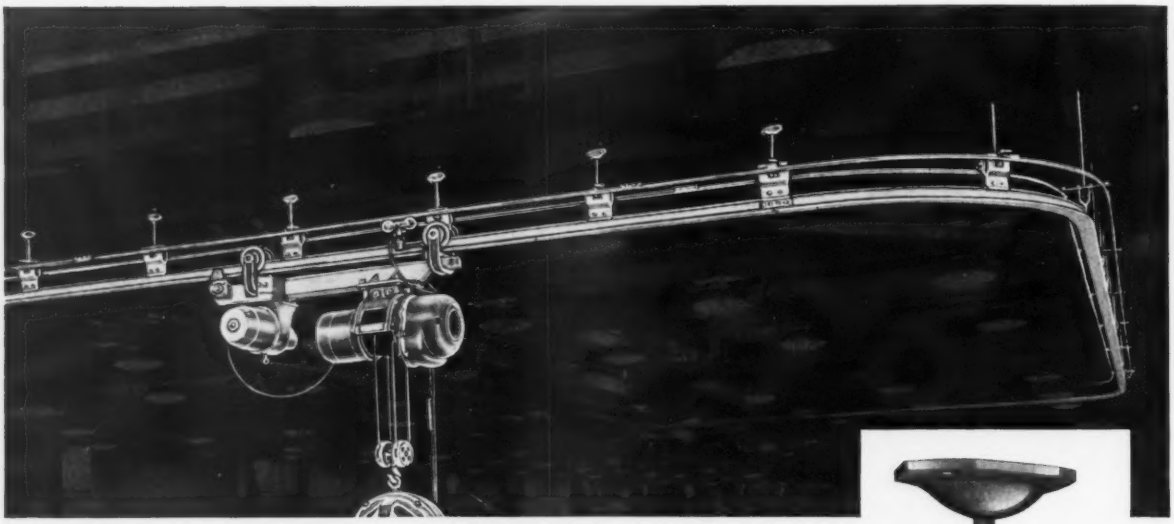
PACIFIC

August	2,430	—20	12,372	—18	.....	.....	11,182	.....	5,908	—26
September	1,725	—24	15,067	—16	1,695	— 4	15,295	.....	6,863	—14
October	2,508	—10	12,157	—15	3,137	— 9	8,705	.....	7,567	—13
November	2,257	—14	14,654	—14	3,048	+ 1	.....	.....	6,369	—17
December	1,968	—14	14,489	—19	2,259	—10	.....	.....	6,074	—20

Industrial Supplies	Change	Lumber and bldg. mat.	Change	Mch. equip. and supplies excl. elec.	Change
2,065	—14	1,650	—22	328	—29
1,867	—23	1,948	— 9	414	—24
2,057	—14	2,019	+ 1	429	—23
1,780	—23	1,597	— 2	481	— 0
1,661	—36	1,984	+22	216	—21

MOVE MATERIALS Anywhere in your plant

WITHOUT REHANDLING



NEW T-BEAM MONORAIL SYSTEM

Provides LOW COST Materials Handling

With "T-Beam," Whiting's new low-cost materials-handling system for light load applications, you can move light loads anywhere in your plant—*without rehandling!*

This means that T-Beam—alone—takes care of *all* movement of material and parts through your production process. Work is carried from job to job, from one area or building to another—out the shipping room door, if necessary—without transfer to any other conveyance. The result: reduction of material movement to a smooth, *inexpensive* flow through your plant.

Like conventional Trambeam, the new T-Beam consists of a one-piece rail section. It is made of high-carbon steel, providing extra strength without extra weight, and giving its flat tread an exceptional wearing quality. In addition, it is *flexibly suspended* to prevent bending of the hanger rods and to equalize wheel loads. Let Whiting engineers show how T-Beam can speed up production and lower handling costs in *your* plant.

WHITING CORPORATION, 15688 Lathrop Ave., Harvey, Illinois

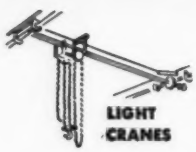
Offices in Chicago, Cincinnati, Detroit, Houston, Los Angeles, New York, Philadelphia, Pittsburgh, and St. Louis. Agents in other principal cities. Canadian Subsidiary: Whiting Corporation (Canada) Ltd., Toronto, Ontario. Export Department: 30 Church St., New York 7, N. Y.

WHITING TRAMBEAM

HOISTS

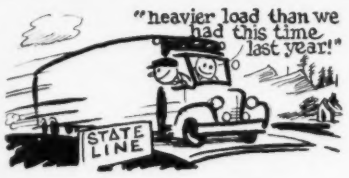
JIB CRANES

OVERHEAD TRAVELING CRANES



LIGHT CRANES

***Also*—Foundry Equipment, Railroad Equipment, Metal-Working Machinery, Swenson Evaporators, Spray Dryers and Food Freezers**



Continued from page 27

should be noted in the "Western Outlook" section this month.

One is the fact that California oil companies, overburdened with heavy oil largely as the result of dieselization of railroads, are shipping the surplus eastward in record quantities, no doubt to take advantage of the coal situation. Second is the scheme of California canning peach growers, who propose to make a joint estimate with the canners of the 1950 market potential, and then thin out the surplus fruit from the trees before it ripens.

Such trends as these indicate that the Western economy can shape itself as needed and therefore keep an even keel. So it is hard not to be reasonably optimistic about the future.

Employment reports from various Western states indicate a steady tempo. California's manufacturing employment for 1949 was 2% below the record year of 1948. Montana and Utah were each 4,000 above a year ago in January, and Idaho was up 3%. December in Arizona was the fourth consecutive month of rising employment. Oregon's seasonal upturn came earlier than usual, and Washington looks forward to dam construction and other public works having a good effect on the general situation.

Interstate truck traffic continues to grow. Part of this may be seasonal shipments of Arizona citrus to California juice processors.

Oil

All-time records for one week's oil shipments from the Los Angeles-Long Beach harbor were broken recently when 34 tank ships took 3,000,900 barrels of oil out of the port for all parts of the world. Fourteen of these ships carried 1,200,000 barrels of fuel oil to the east coast.

Simultaneously, General Petroleum Corporation completed a $2,250,000 enlargement of its big "coker" unit at Torrance, which, each day will turn 22,000 barrels of heavy fuel oil into gasoline, gas oil, dry gas, coke, and petroleum gases suitable for "bottling."

Thus powerful forces were at work to reduce the great surplus of heavy oil that has piled up in the West, which uses relatively little of it, and instead needs large quantities of gasoline and other light fuels.

Fuel oil production already has turned down nationally for the first time in a decade, while total production of motor fuel in 1949 hit a record of 960,000,000 barrels, up 38,000,000 over 1948. In the West, even more than elsewhere, gasoline consumption has held high, helped somewhat by the all-time high of 6,238,088 new passenger cars turned out last year, and by the cumulative effect of westward migration.

Indirectly tending to stimulate gasoline consumption, over the long pull ahead, will be a rapid and continuing decline in highway construction costs, which in 1949 dropped 10%. Many road-building projects have been delayed by construction costs which had far outrun budget estimates when funds were originally appropriated.

The Bureau of Mines predicts that total demand for all U. S. petroleum products will be up about 3.2% this year, and an economist for Socony-Vacuum Oil says crude oil prices are likely to stay at the present level. He pointed out that last year there was virtually no change in inventory levels, which in 1948 had been piling up rapidly. He also said, however, that present high prices may be stimulating too much exploration for new oil sources.

Indicating continuation of a powerful recent trend in demand for diesel oil is prediction by a trade source that 3000 diesel locomotives will be built this year, as compared with perhaps 50 steam and 10 electrics. At present prices, fuel costs for locomotive propulsion costs as much as 60% less with diesel fuel than with coal.

PETROLEUM

(California, Oregon, Washington, Arizona, Nevada)

(From Bureau of Mines)
(In Thousands of Barrels Daily)

	Dec. 1948	Dec. 1949
Crude Production	950	868
Gasoline	380	364
Gas, Oil and Diesel	152	110
Heavy Fuel Oil	400	323
All Products	1,026	943

ELECTRIC ENERGY

(Production for Public Use—in thousands of kilowatt hours.)
(Source: Federal Power Commission)

	Dec. 1948	Dec. 1949
Mountain	1,270,918	1,387,495
Pacific Northwest	1,829,683	1,884,228
California	1,816,929	1,803,075
Total Pacific	3,646,612	3,687,303

IRON AND STEEL

WESTERN AREA OF THE UNITED STATES

From American Iron and Steel Institute (in net tons)

	Jan. 1949		Jan. 1950	
	Output	Per Cent of Capacity	Output	Per Cent of Capacity
Pigiron Output	232,437	93.9	189,030	66.9
Steel Output	436,216	97.6	419,601	71.9
Alloy Steel Output	7,706	.....	8,570	.....
Carbon Ingots, Hot Topped*	9,096	.....	9,443	.....

*Included in total steel.

NATURAL GAS

(CALIFORNIA)

(Compiled by Roy M. Bauer, gas supply supervisor, Southern California Gas Company)

Utilization (in thousands of cubic feet)

Number of Consumers	Sept. 1948	Sept. 1949
Domestic and Commercial	2,457,056	2,619,736
Industrial	5,655	5,920
Domestic and Commercial Sales	10,221,079	10,704,415
Industrial Sales	15,029,958	13,563,453
Electric Generation	8,128,570	8,539,396
Net Receipts from Producers	35,946,359	35,796,261

Coal

Coal production during the strike period was virtually nil. Only a few small non-union wagon mines were operating and they were under constant threat of closure by picketing.

BITUMINOUS COAL AND LIGNITE

(In thousands of tons—From Bureau of Mines)

	Dec. 1948	Dec. 1949
Colo.-New Mexico	705	430
Wyoming	713	418
Utah	666	325
Montana	243	243
Wash.-Alaska	147	130

Steel

Effects of the coal strike will be felt by Western steel users in limited supply for some weeks to come. At this writing (March 2), Geneva has shut down, Fontana was running about 25% curtailed and Bethlehem Pacific's production was about 61% of full capacity. Distribution channels were fairly well filled, so there was no immediate shortage, but the lag after consumption is resumed will be felt.

For the longer range, prospects for the Western mills seems good, with big public works projects beginning to get under way. For example, the Hyperion sewer at Los Angeles, about half done, takes 13,000 tons of reinforcing steel. The Kaiser Co. cracked into major eastern pipeline projects for the first time early in March, when they were awarded a contract for the Trunk Line Gas Supply Co. pipe, about 1300 miles from Louisiana to Illinois.

With the two largest steel companies going into South America for ore, instead of beneficiating the lower grade ore remaining in the Mesabi range in Minnesota, speculation over the comparative cost of the Wyoming, Utah and California ores used by C. F. & I., Geneva and Fontana is beginning to arise. Unfortunately, all three companies have their own ore, so it is not known whether the Western ores are cheaper. They are not considered too rich, and there are varying rail hauls involved. Also the supply, while adequate for regional needs, is apparently not large enough to make any dent in the national picture. A recent published study of comparative Lake Erie prices for different ores is as follows: Lake Superior

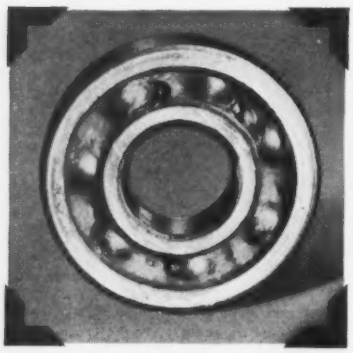
Continued on page 31

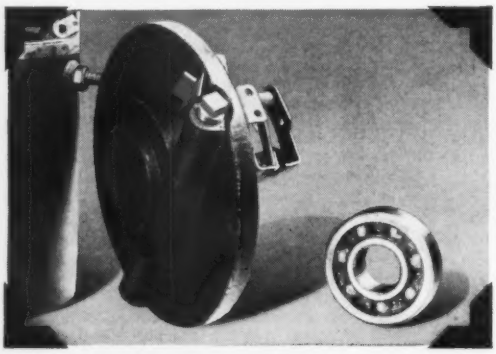
STANDARD ENGINEER'S REPORT

DATA

LUBRICANT	Calol O.H.T. Grease
UNIT	Automotive generator bearing
LUBRICATOR	Sealed at installation
CONDITIONS	Heavy-duty diesel truck engine
MILEAGE	70,000
FIRM	H. G. Makelim Co., San Francisco–Oakland

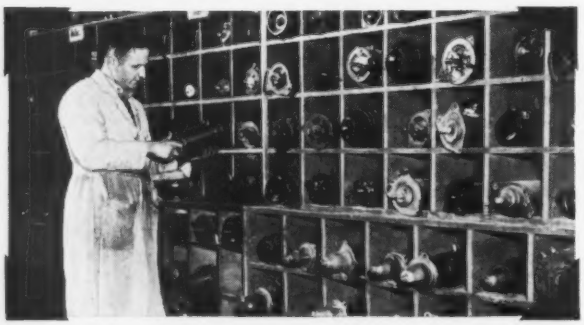
Sealed generator bearing still perfect after 70,000 miles!





ONE APPLICATION OF CALOL O.H.T. GREASE, sealed in the bearings when this diesel-engine generator was assembled by H. G. Makelim Co., prevented any bearing wear in 70,000 miles of heavy-duty truck service. Generator was disassembled at this time only because it needed new brushes, and for general inspection. Note a permanent plug replaces usual grease fitting.

70,000 MILES OF SERVICE did not affect or use up any of the CALOL O.H.T. Grease in the bearings. In special tests, one filling has lubricated bus-generator bearings perfectly for more than 150,000 miles.

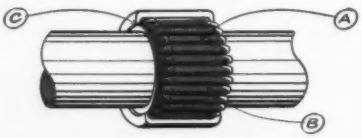


"WITH CALOL O.H.T. GREASE SEALED IN BEARINGS, we recommend installing generators without grease fittings," says Frank Balzarini, H. G. Makelim Co. Foreman. "CALOL O.H.T. eliminates need for greasing between overhauls. And eliminating fittings stops over-greasing—a big cause of wear and trouble."

REMARKS: The H. G. Makelim Magneto Repair Company, San Francisco and Oakland, one of the West's oldest automotive-electrical and carburetor repair firms, specializes in servicing equipment in the toughest automotive service—truck, bus and car fleets.

Besides generator bearings in this service, CALOL O.H.T. Grease is recommended for all types of bearings in service under extremely severe operating conditions.

How CALOL O. H. T. Grease protects bearings in severest operating conditions



Used in any type of bearing under any operating condition, high temperature-low speed, high speeds to 10,000 rpm, temperatures from minus 10° F. to 400° F., CALOL O.H.T. Grease will last indefinitely.

A. Contains special oxidation inhibitor—prevents rusting, corrosion, hardening of grease at any time.
B. Resists high temperatures — eliminates coking.
C. Provides excellent seal against water... lubricates efficiently in slight moisture.

CALOL

STANDARD TECHNICAL SERVICE checked this product performance. If you have a lubrication or fuel problem your Standard Fuel and Lubricant Engineer or Representative will give expert help; or write Standard of California, 225 Bush St., San Francisco 20.

Trademark "CALOL" Reg. U. S. Pat. Off.

STANDARD OIL COMPANY OF CALIFORNIA

Continued from page 29

natural ore, $7.14; Lake Superior taconite nodules, $9.40; Labrador, $7.72; Venezuela, $8.84. When the richness of the ore and the mining and transportation charges are evened up, however, the Lake Superior natural is valued at 14c per unit of iron content, while the others are all 14.5c.

Volume of bedsprings for 1948 for the West is reported by the Census Bureau as follows, in thousands of units.

	Box Springs	Coil Springs	Flat Springs
Mountain	32	*	*
Colorado	15	*	*
Arizona	13	*	*
Pacific	492	128	*
Washington	69	*	*
Oregon	17	....	....
California	406	*	*

*Figures withheld, to avoid disclosing individual operations.

Nonferrous Metals

Copper production continued at a relatively high level during February. Lead and zinc was still down because of continuing shutdowns of many deep mines. The activity of the copper industry tended to minimize the over-all effect of the inoperative mines, however, as the other nonferrous metals are produced in conjunction with copper.

Zinc production figures for 1949 show that Arizona output was far greater than any previous year, as the result of continuous operation of zinc-lead mines. Copper Queen mine at Bisbee increased zinc output 29% over 1948. Idaho, the leading zinc producer, and other Western states except Nevada and California declined. New Mexico's drop was 29%. Total Western production declined 5% the same as lead.

Aircraft

Aircraft production is running sluggishly along in humdrum fashion, the victim of too much progress.

New technical developments in so many different directions have industry and military leaders wondering which ones must be followed up first.

Defense Secretary Johnson has ordered a review of the entire guided missile program, which has mushroomed to surprising size and now covers such gadgets as bombs to be dropped from planes and guided inside a circle of anti-aircraft defenses; ram-jet guided missiles to be steered at supersonic speeds, overtaking planes in flight; pilotless planes, two-stage rockets, and various recent successors to the V-1 and V-2 flying bombs of World War II.

While such contracts do not run to multi-million-dollar size like production orders for standard aircraft, they are vital to the military and are equally necessary to the industry because they may be the nucleus to future government business. Northrop has just added a separate special weapons department to conduct research projects "outside the field of manned military aircraft." To help finance a rather full schedule, it has secured refinancing of its existing RFC loan.

Ryan has added additional fabrication schedules on assemblies for the 3000-m.p.h. Aerobee high altitude sounding rocket. It also has taken on a $750,000 contract for the largest external airplane wing tanks ever designed, for a new type of plane.

A new folding-fin aircraft rocket, described as "the first successful air-to-air rocket small enough to be carried in quantity by a mother aircraft" and fired at other planes, has been announced by the Navy and may prove to be the primary weapon on the swept-wing F-86 Saber and F-94 interceptors.

Lockheed is working on the Navy's new sub-killer, the P2V-4 Neptune that can detect schnorkel subs with aid of magnetic detection gear and radio sonobuoys dropped to radio back the sound of a sub's motors. And the Navy is planning to use helicopters for anti-sub work, indicating a market for larger and better "eggbeaters."

Largest orders for orthodox planes recently booked is a $13,000,000 contract just signed by American Airlines for 11 new DC-6B planes to be delivered over the forthcoming year.

Canning and Packing

California is now just about tied with Ohio for second place in evaporated milk production, according to Bureau of Agricultural Economics figures reported by the

Evaporated Milk Association, but seems to be speeding up its pace preparatory to moving out in front of Ohio (perhaps that means a Rose Bowl victory next time!), although Wisconsin remains far in the lead of every other state. Here are the figures for 1946 through 1948, in cases:

	1946	1947	1948
Wisconsin	19,113,000	19,894,000	20,118,000
Ohio	7,608,000	7,720,000	7,654,000
California	7,131,000	6,605,000	7,448,000
Washington	1,761,000	1,733,000	2,119,000
Utah	1,543,000	1,592,000	1,630,000

Although comparative prices of canned milk for 1949 and 1948 are not reported, average prices paid by condenseries for milk to be used primarily for canning are as follows, per 100 lbs.

	Nov. 1948	Nov. 1949
Idaho	$4.06	$3.79
Washington	4.86	3.66
Oregon	4.74	3.72
Colorado	4.13	3.31
Utah	3.60	3.28
California	4.21	3.56

Faced with the prospect of far more cling peaches this year than can be marketed, the California Canning Peach Association has come up with a proposal for eliminating the surplus by making an official estimate of the crop at thinning time, joining with the canners in an official estimate of the market potential, and then thinning out or green dropping the surplus. If the estimates of size of crop are incorrect, as occurred last year and the ripened crop is too large, the growers propose to have this extra tonnage included in the federal school lunch program.

Cling peaches, the major California canned fruit item, have been selling better than a year ago—1,632,427 more cases were moved between June 1 and February 1, but there were 2,000,000 more cases on hand Feb. 1, 1950 than at the same date a year ago. Fruit cocktail, second largest fruit item, is in a little better shape, with 775,000 less cases to move than a year ago. Apricots and pears, the other major fruits, are in good statistical position. There are less canned tomatoes on hand, but more tomato juice.

As 1949 was a bad season for California boysenberries, black and youngberries, the indicated acreage this season is only 3,680 acres, as against 4,235 acres in 1949. Raisin shipments in January were 32% above a year ago, and the fact that 56% were in bulk form primarily for manufacturing outlets, as against 41% bulk for total 1949 shipments, is taken to indicate that the one-time big bakers' market is on its way back.

Sugar

A year of stiffer competition for the Western market between cane and beet refiners is in prospect, with some signs of price wars already apparent. For several years both cane and beet refiners have been able to market their surplus, above what the Western market would take, in the Mississippi Valley, because the New Orleans cane refineries were not able to supply this midwest area while Cuban crops were short. Also the government took considerable sugar from New Orleans for army and relief use in Europe, but now that Cuban production is again in full swing and the government has curtailed its buying, the cane and sugar refiners from the West probably will have considerable difficulty in disposing of any great amount of tonnage in the Mississippi Valley. The fact that operating costs have not gone down of course does not help the situation.

Prospect is for a big beet crop in the West, with California likely to produce an all-time high of 10,000,000 bags. Figures from the American Beet Sugar Association give the final report on the 1949 season, the California total including the expected spring of 1950 crop from the Imperial Valley, as follows, in 100-lb. bags of refined sugar:

	1948	1949
California	6,637,041	8,221,989
Colorado	4,121,133	6,214,555
Idaho	2,926,877	2,517,758
Montana	1,886,520	2,049,687
Nebraska	1,114,959	1,486,695
Oregon	1,495,701	1,205,094
Utah	1,165,486	1,244,790
Washington	715,800	840,769
Wyoming	1,651,672	1,040,672

Flour

Every month *Western Industry* reports the big bakers as bearish. Messrs. Langendorf, Kilpatrick, Van De Camp, et al., reportedly are figuring there will be so much free wheat in the Midwest not under government loan and for which it will be impossible to provide storage that it will break the market some months hence. Millers are not so sure about that. They assert that this

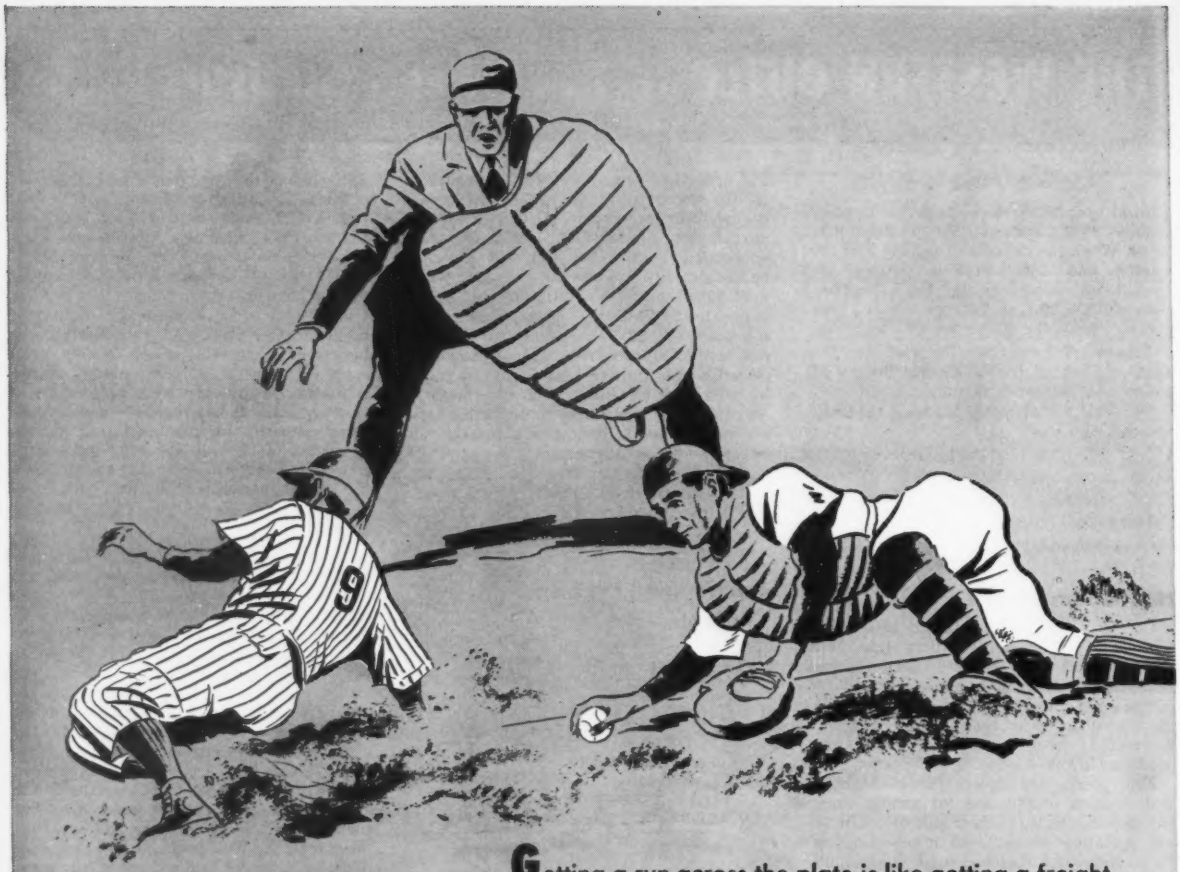
Continued on page 33

WHEAT FLOUR

In thousands of sacks

(From Bureau of the Census)

	Dec. 1948	Dec. 1949
Oregon-Washington	1,554	995
Montana	285	268
Utah	318	330
Colorado	445	329
California	372	321
TOTAL	2,974	2,243



Safe at home

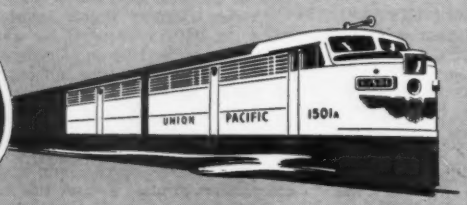
Getting a run across the plate is like getting a freight shipment to its destination safely and on time.

As in baseball, it takes organization and teamwork to get results. It takes a hard-hitting group of experienced men.

Union Pacific also provides the equipment and facilities to expedite your freight. Dieselized motive power, new classification yards that cut switching time in half, and electrified central traffic control are among the recent major improvements which assure shippers of fast, efficient service.

We won't be satisfied until all shippers who patronize our railroad can sincerely say "That Union Pacific is a great outfit."

UNION PACIFIC RAILROAD



BE SPECIFIC: *Ship* UNION PACIFIC

Continued from page 31

situation will not be true on the Pacific Coast, and there will be an actual shortage of high protein spring wheat from Montana and other Rocky Mountain states.

Apparel

Seasonal pickup in production is beginning in Western garment factories, which had been dragging through the slack season. The trade is buying carefully but on a larger scale than prevailed a few months ago. Many had allowed inventories to drop, until indications of a market turn suddenly encouraged forward buying.

With prices dropping, the effect of last summer's slow-down in retail sales was magnified, the U. S. Department of Commerce points out, and many business men were predicting a far greater fall-off in demand than occurred. Actually, at the lower prices, the unit volume of goods bought by the public held up more than sales totals indicated. Eventually the reduced inventories ran out and the trade generally was faced with need to restock. Mills, meanwhile, had slowed down to meet the slackened pace and they could not immediately satisfy the sudden demand for more textiles. Result has been a brisk flurry of activity.

Cotton spinning last summer hit its lowest point since 1939, but has rebounded sharply. Rayons similarly are rebounding and orders for both textiles are now booked well into the middle of 1950.

Competition by rayon in the summer suiting field now threatens to spread into the heavier fabrics, giving wool textile manufacturers something to worry about.

Wool supply still is at an all-time low, keeping prices high, so the spinners are squeezed between high costs and a more demanding market. The buying public is growing more choosy, so that quality nevertheless is gradually improving, at the expense of narrower profit margins.

Furniture

General tone for the industry in both Washington and Oregon is optimistic and present prospects are that 1950 will be a substantially better year than 1949. Wooden furniture production is 95% booked through May; upholstery plants are booked six to seven weeks ahead. Conditions have been good since last summer. Furniture merchants have tended to increase orders rather than to cancel out. Native hardwood prices are stable but supplies have tended to run a little short as result of hard winter and thaw-soft roads. Labor relations are amicable and stable; upping of hourly minimums in Southern states may ease wage differential some for this area which has top-level rates.

Southern California furniture makers report a pickup in demand, reflecting improved retail demand plus rebuilding by dealers of their inventories. Pool car shipments are increasing. Among most popular items currently are new types of television chairs and tables, equipped with swivels and ball bearings.

Pulp and Paper

Mill management reflects much optimism at present. Operations in many cases have been stepped back up to 7-day 24-hour production basis. Despite the fact that European mills have a 30% advantage in exchange and Canada has a 10% differential, prices are holding firm. Some eastern Canada production which had been supplying the British Isles has been curtailed, but there has been no important diversion of tonnage to depress the United States market. The pollution question is currently of considerable concern. Washington mills have 16 months of an 18-month ultimatum left in which to "cleanup" but engineers say compliance within the limit is impossible.

PULPWOOD

(Pacific Northwest)

(Cords of 128 cu. ft., roughwood basis. Source: Bureau of Census)

	Dec. 1948	Dec. 1949
Receipts	266,617	243,749
Consumption	270,353	292,218

Census Bureau figures just released, show the following 1948 furniture production for the West. (Figures in thousands of dollars.)

	Total All Products	Non-upholstered household furniture	Wood	Metal	Other	Upholstered furniture	Bedding
Total Mountain	9,811	2,060	2,049	*	*	4,265	3,486
Montana	85	85	85	....	....	....	....
Colorado	5,207	*	*	*	*	2,145	*
New Mexico	651	*	*	....	....	*	168
Arizona	1,484	*	*	....	*	*	961
Utah	2,252	*	*	....	....	1,533	*
Total Pacific	162,429	76,761	61,771	13,938	1,052	52,390	33,278
Washington	19,969	10,822	*	*	....	5,520	3,627
Oregon	21,634	14,646	*	....	*	5,710	1,278
California	120,826	51,293	*	*	*	41,160	28,373

*Withheld to avoid disclosing individual operations.

WESTERN PINE ASSOCIATION

(Comparative report, 105 identical mills, in thousands of board feet)

	Week Ending Feb. 25	Corresponding Week a Year Ago	Three Year Weekly Average For Feb.	Total to Date 1950	Total to Date 1949
Orders	70,333	49,349	57,342	574,624	425,345
Shipments	66,463	49,518	59,949	516,430	397,913
Production	54,544	39,415	47,330	366,336	319,522

Plywood

Mills are currently in good position. Operations are at a very healthy level and plants are, in the main, all in production. The market is strong and order files are comfortably full. There has been another price increase within last 30 days running about $5 per thousand feet, one-quarter-inch basis, or roughly 7%. Buying is active. Peeler log situation is a bit tighter. Many logging camps were down in January and February on account of heavy snow and severe cold and log production fell behind. Log demand is strong and prices firm.

ETHYL ALCOHOL

(From Bureau of Internal Revenue)

Production *(in proof gallons)*

DOMESTIC UNDENATURED ALCOHOL

	Jan. 1949	Jan. 1950
California	559,736	402,193
Colorado	....	....
Washington	481,367	315,541

DENATURED ALCOHOL

	Jan. 1949	Jan. 1950
California (Completely Denatured)	42,898	16,568

SPECIALLY DENATURED

	Jan. 1949	Jan. 1950
California	323,971	304,959
Utah	....	....
Washington	24,697	16,444

Cement

In the midst of winter doldrums has come another indication of cement mills reaching out to serve additional needs. Calaveras Cement Co., only producers of white Portland cement in the West, but who have concentrated their efforts since the war on gray cements, have resumed manufacture of this item. Calaveras made white cement for many years before the war and sold it as far away as India. The three other American producers are in the East.

Lumber

Prospects for 1950 are encouraging. Many mills lost production in first two months of year because of extreme cold and snow. Midwest buyers who used to come out in January and shop for distress business came a couple of months early this past winter, found they had to take mill's terms, not give theirs. Market is firm and some strengthening of prices. Movement is now pretty much seller's market. Western Pine orders are 35% above year ago and production 9% up. Douglas Fir region mills reflect more normal production but many mills not booking new business because of already heavy commitments.

CALIFORNIA REDWOOD ASSOCIATION

	January 1950 All Species	January 1949 All Species
Production	43,192	39,121
Shipments	34,893	32,306
Orders Received	39,751	31,475

WEST COAST LUMBERMEN'S ASSOCIATION

	January 1950 Aver. Per Wk.	1950 4 Weeks M Feet	1949 4 Weeks M Feet
Production	133,342	577,772	609,837
% 1945-1949 Yrs.	81.8%	88.6%	93.5%
Orders	213,633	925,670	743,651
Shipments	148,095	641,696	627,274

HOW TO BUY STEEL

Using New Price Schedules

The base prices and extras recently announced by various steel mills have changed the relationship between mill prices and our warehouse prices. We also have changed our warehouse prices to encourage steel users to combine their orders into larger quantities which make possible lower warehouse prices.

To take full advantage of these changes, most buyers will want to revise their buying policy. The relationship of these mill prices to our warehouse prices has been so changed that in some cases you can actually buy from our warehouses small quantities of a size of bars, plates, sheets and strip when combined for shipment at one time to one location at less than from the mills.

FOR EXAMPLE: Based on mill prices quoted in Iron Age of February 9, an order consisting of a variety of sizes of hot rolled bars, plates, sheets and strip totaling 10 tons now costs less from warehouse than from mill if the individual items are under 1000 lbs. each.

Product	Ryerson Warehouse Base Price F.O.B. Chicago	*Mill Base Price F.O.B. Chicago
H. R. Bars	4.60 per 100 lbs.	4.95 per 100 lbs.
H. R. Plates	4.80 " " "	5.00 " " "
H. R. Sheets	4.65 " " "	4.85 " " "
H. R. Strip	4.70 " " "	4.75 " " "

*Note—Mill base price from Iron Age of February 9. We have added the extra for quantity under 1000 lbs.

This situation may seem paradoxical but develops naturally because of the difference between mill and warehouse operations. Steel mills producing tremendous tonnages, develop lowest possible overall costs. Small mixed orders interfere with mass production and greatly increase overall mill costs. On the other hand our steel is secured from the mills in large bulk tonnages and is sold from our warehouses to steel consumers in relatively small quantities. Our steel service plants are especially designed to handle this type of business. In fact, this method of distributing steel in small lots continues to be the most practical and economical method. Small quantities are taken from stock, cut to size, and shipped promptly. There always has been economy in concentrating orders with one warehouse source to save paper work in ordering, paying invoices, etc.

But now with present mill practices and present mill extras together with the greater warehouse price reductions for larger quantities, it is even more economical to concentrate orders with one dependable source. You are also able to keep your inventories streamlined when you are assured of quick Ryerson Steel Service.

Our sales representatives have been especially schooled on our new price structure and will be glad to show you how to buy most economically. We have printed a Base Price Folder and Extras Booklet, which make it possible to easily figure all prices. It may be well to note that we have adhered to a one-price policy throughout the years—so every Ryerson customer from the smallest to the largest is charged the same price for the same quantity.

However, if you need prices for estimating, budget or other purposes, we are always glad to help you figure, or quote to your specifications . . . and equally important, to deliver your steel when you want it, where you want it—exactly as ordered.

So if you have any problems or questions, see your local Ryerson sales representative or write for the new price bulletins.

PRINCIPAL PRODUCTS: Bars, Structurals, Plates, Sheets, Tubes, etc. in Carbon, Alloy and Stainless Steel—All Types and Finishes

MAIL TO NEAREST RYERSON PLANT

Please send me, without obligation, your new Base Price Folder and Extras Booklet.

NAME_____ TITLE_____

COMPANY_____

CITY_____ ZONE____ STATE_____

17

RYERSON STEEL

LOS ANGELES PLANT: Mail Address: Box 3817, Los Angeles 54, Calif. Plant: 4310 E. Bandini Blvd., Phone: ANgelus 2-6141. From San Diego (No toll) Phone: ZEnith 6660.

SAN FRANCISCO PLANT: Mail Address: Box 188 Emeryville. Plant: 65th & Hollis Sts. Phones: OLympic 3-2933, ENterprise 10176.

Methods of 211 Western Plants; Do They Compare With Yours?

THIS is the second installment of *Western Industry's* cooperative survey of management and operating practices in 211 Western industrial plants, something that apparently never has been done elsewhere, least of all in the West.

Comment already received from various quarters indicates that it will be of outstanding importance in letting various areas in the West know how they stand in comparative efficiency with each other, and whether methods common in the West match up to those in the East. A significant analysis of the first installment, which appeared in our March issue, on the topic of division of functions, appears above on this page. In succeeding issues other evaluations will be published.

This second installment deals with organization charts, communications, the prevalence of methods, standards and production engineering programs and the activities covered by them.

We once fondly hoped the entire survey could be covered in one issue of *Western Industry,* but as the tabulations began to be set in type, it developed that it would unquestionably take at least four installments to report the facts alone, to say nothing of some of the evaluation studies we hope to publish before we get through.

Consequently we trust, that our readers will bear with us for rashly predicting in the March issue that the April installment would include cost controls and efficiency. The reports on these topics, the prevalence of methods, standards and production engineering programs and the activities covered by them will, for lack of space, be reserved for subsequent issues.

As reported in the March issue the 211 reporting plants are of various kinds and sizes, located in California, Oregon, Washington, Idaho, Utah and Colorado.

The number of plants reporting and the types of operations involved in-

A Challenge to Industry in the West!

First installment of survey reveals the West lagging behind in methods

By W. L. BARNES

Chief Industrial Engineer, Cutter Laboratories, Berkeley
President, Society of Industrial Engineers

I APPRECIATED very much the chance to review the first installment of your magazine's survey on Western organization. In order to get the picture more clearly, I pulled off the accompanying recapitulation of the three functions with which I am most familiar, production engineering, industrial engineering, and production control. In order to compress the data still further, I summarized each group by whether the function was performed by staff, by the line organization, or not at all.

To me the chart indicates a couple of startling things: California appears to be advanced and Northern California distinctly retarded in their recognition and use of production staff services. Oregon is about like Northern California, and Western Washington is somewhere in between. In general, also, Western plants appear to use less services than do plants in the West having Eastern policies.

This data confirms what the Society of Industrial Engineers has felt to be the case for some time, that is, the West is behind the East in using those staff services which in the East have become routine parts of good management. This is especially regrettable because in the West labor rates and material costs are higher to start with and every possible tool available is needed to reduce costs.

USE OF STAFF SERVICES

(A comparison drawn from the first installment of *Western Industry's* survey of management and operating methods published in March issue)

PRODUCTION ENGINEERING:

		Southern California	Northern California	Oregon	Western Washington
Western*	Staff	14	8	5	25
	Line	9	2	3	27
	Not Done	2	10	11	9
Eastern*	Staff	3	1	—	3
	Line	—	2	—	2
	Not Done	1	1	—	3

INDUSTRIAL ENGINEERING:

Western*	Staff	16	6	2	15
	Line	8	1	6	15
	Not Done	1	13	11	18
Eastern*	Staff	4	3	—	2
	Line	2	—	—	2
	Not Done	0	1	—	4

PRODUCTION CONTROL:

Western*	Staff	10	11	4	24
	Line	14	2	11	16
	Not Done	2	9	4	17
Eastern*	Staff	2	2	—	4
	Line	3	—	—	2
	Not Done	0	2	—	1

*Origin of policies and methods.

clude the following:

Southern California: 52 plants. Metal fabrication, 23; wood fabrication, 4; ceramics, 4; plastics, 3; remainder scattered through cloth and leather, chemicals, gas, electric power, oil, milk products.

Northern California: 28 plants. Food products, 12; metal fabrication, 9; wood fabrication, 7.

Oregon: 29 plants. Wood fabrication, 16; metal fabrication, 8; textiles, 1; dairy products, 1; paper, 1.

Western Washington: 84 plants.

Metal fabrication, 36; wood fabrication, 22; remainder scattered through

Continued on page 38

ORGANIZATION CHARTS

Does Your Company Have One? When Was It Prepared? Who Uses It Mostly? Is It Constantly Available to All Your Executives and Supervisors? Who Is Responsible for Keeping It Up to Date?

Designations "Western," "Eastern" and "Mixed" indicate whether methods and systems were independently developed in the West, or formulated by eastern management or parent company, or are a combination of both. Numbers indicate number of plants.

SOUTHERN CALIFORNIA

Organization Chart?

	Yes	*No*
Western Methods	40	10
Eastern Methods	10	4
Mixed Methods	3	1*

**System changes every day.*

When Prepared?

	Western	*Eastern*	*Mixed*
1949	7	1	....
1948	3	....	....
1947	4	2	....
1946			
1944			
1943	.....1 each		
1939			
1942			
1930			

Who Uses Mostly?

Western Methods

Exec. Management, Owner, Adm. Heads, Dept. Heads	14
Genl. Mgr. and Salesman	1
Superintendent	2
Industrial Relations	1
No one	1

Eastern Methods

Dept. Heads & Home Office	1
Department Heads	1
Supervisors	1
Production	1

Mixed Methods

Plant Mgr. & Home Office	1
Superintendent	1
Not used	1

Is It Available?

	Yes	*No*
Western Methods	18	1
Eastern Methods	5	1
Mixed Methods	3	1

Who Keeps Up to Date?

Western Methods

Executive Management (includes various officials)	12
Controller	2
Planning Dept.	1
Salary Adm. Dept.	1
Planning & Industrial Eng.	1
Industrial Relations	1

Eastern Methods

Plant Manager	2
Dept. Heads and V.P.	1
Industrial Engineering	1
Methods Engineering	1

Mixed Methods

Sup. and Manager	1
Secretary to Plant Mgr.	1
No one	1

NORTHERN CALIFORNIA

Organization Chart?

	Yes	*No*
Western Methods	9	15
Eatsern Methods	3	1

When Prepared?

	Western	*Eastern*
1950	....	1
1949	3	1
1948	1	....
1940	1	....
Under constant revision		1

Who Uses Mostly?

Western Methods

Executives & Dept. Heads	4
General Manager	1
Operating & Finance Com.	1

Eastern Methods

Department Heads	1
Manager and Supt.	1
Plant Mgr. and Ind. Rel.	1

Is It Available?

	Yes	*No*
Western Methods	5	5
Eastern Methods	3	....

Who Keeps Up to Date?

Western Methods

Executive Management	2
Personnel Dept.	2
Finance Dept.	1

Eastern Methods

Industrial Relations	2
Accounting Dept.	1

OREGON

Organization Chart?

	Yes	*No*
Western Methods	7	20
Mixed Methods	1	1

When Prepared?

	Western Methods	*Mixed Methods*
1949	3	....
1948	2	....
1947	2	1
1946	1	....

Who Uses Mostly?

Western Methods

Management	4
Supervisors	2
Production Mgr.	1

Is It Available?

	Yes	*No*
Western Methods	7	....
Mixed Methods	....	2

Who Keeps Up to Date?

Western Methods

Head Office	5
Controller	1
Personnel	1

Mixed Methods

Parent Office	1

WESTERN WASHINGTON

Organization Chart?

	Yes	*No*
Western Methods	26	45*
Eastern Methods	3	5
Mixed Methods	1	3

**One of these believes chart desirable.*

When Prepared?

	Western	*Eastern*	*Mixed*
1949	3	....	....
1948	3	....	....
1947	4	....	....
1946	3	....	....
1945	4	....	....
1940	1	....	....
1937	....	....	1*

**Kept current.*

Who Uses Mostly?

Western Methods

Executive Officials	10
Supervisors	2
Labor Relations	1
V. P. and Yard Supt.	1
Superintendent	1
All	1

Eastern Methods

Management	3

Mixed Methods

Executive Management	1

Is It Available?

	Yes	*No*
Western Methods	19	3
Eastern Methods	3	....
Mixed Methods	1	....

Who Keeps Up to Date?

Western Methods

Executive Management	10
Controller	1
Area Manager	1
Production Manager	1
Superintendent	1
Yard Superintendent	1
Personnel	1
Industrial Relations	1
Research	1

Eastern Methods

Management	3

Mixed Methods

Local Plant Manager	1

EASTERN WASHINGTON

Organization Chart?

	Yes	*No*
Western Methods	5	1
Mixed Methods	1	1

When Prepared?

	Western Methods	*Mixed Methods*
1946	1	....
1945	1	....
Date not given, but kept current	1	1

Who Uses Mostly?

Western Methods

Executive Management 3

Mixed Methods

Executive Management 1

Is It Available?

	Yes	*No*
Western Methods	4	....
Mixed Methods	....	1

Who Keeps Up to Date?

Western Methods

Executive Management 2

Industrial Relations 1
Personnel 1

Mixed Methods

Executive Management 1

IDAHO

(All methods reported are Western)

Organization Chart?

Yes	*No*
1	2

When Prepared?

1946 1

Who Uses Mostly?

Executive Management 1

Is It Available?

Yes	*No*
1	....

Who Keeps Up to Date?

Comptroller 1

UTAH

(No origin of methods specified for this state)

Organization Chart?

Yes	*No*	*No Answer*
6	10*	2

**One plant reported discontinued because chart needed constant revision due to expansion.*

When Prepared?

1948, 1947, 1944, "Recently"
At Reorganization .....1 each

Who Uses Mostly?

Top Management, All Executives, Dept. Heads, Production Superintendent .....1 each

Who Keeps Up to Date?

Executive Management..... 3
Comptroller 1
Personnel 1

COLORADO

(All Methods Western)

Organization Chart?

Yes	*No*
3	3

When Prepared

1949 1
1948 1

Who Uses Mostly?

Executive Management..... 2
"Used Very Little"..... 1

Is It Available?

Yes	*No*
1	2

Who Keeps Up to Date?

Production Manager..... 1
Department Heads 1
Industrial Engineering 1

DIVISION OF FUNCTIONS

Are You Satisfied With the Division of Functions Followed in Your Plant? What Are Its Advantages? What Are Its Disadvantages? Have You Any System for Periodic Review and Modification of the System of Division of Functions? If So, Describe Briefly.

SOUTHERN CALIFORNIA

Division of Functions Satisfactory?

	Yes	*No*	*Partially*
Western Methods	25	1	....
Eastern Methods	5	1	....
Mixed Methods	4	....	....

What Are Advantages?

Western Methods

Flexibility 2
Facilitates control 2
Definite line of authority..... 1
Definite responsibility 2
Expedites work..... 2
Distributes work 1
Satisfactory though operations widely separated..... 1

Eastern Methods

Control and supervision of employees 1

Mixed Methods

Ease of control..... 1
Flexibility and speed..... 1
Time tested and found OK.... 1

What Are Disadvantages?

Western Methods

None obvious 3
Versatility required of supervisors 1
Problems encountered in cutting across lines of authority 1
Amount of inter-departmental correspondence 1

Eastern Methods

None 1
Overlapping authority 1

Mixed Methods

None serious 1

System for Review?

	Yes	*No*
Western Methods	13	17
Eastern Methods	3	3
Mixed Methods	3	1

Describe Briefly

Western Methods

At discretion of management 2
Director's meetings: monthly 1
Director's meetings: weekly 1
Director's meetings: frequency not specified..... 1
Management meetings: monthly 1
Management meetings: weekly 1
Management control unit..... 1
Plant engineers revise quarterly 1
At change of job or level of employment 1
Review at intervals..... 1
Constant review 1
Keep current chart..... 1
Informal 1
No specific system..... 1

Eastern Methods

Under constant study..... 1
Through regular audits..... 1
Staff revises functions..... 1
Supervisors' meetings 1

Mixed Methods

Weekly foremen's meeting and discussion 1
Consultation with supervisorial staff 1
Requires coordination 1

NORTHERN CALIFORNIA

Division of Functions Satisfactory?

	Yes	*No*
Western Methods	7	12
Eastern Methods	3	1

What Are Advantages?

Western Methods

Simplicity 1

Eastern Methods

Everyone knows responsibility 1
Clear-cut, simple, well defined 1

What Disadvantages?

Western Methods

Overlapping and friction..... 1
None 1

System for Review?

	Yes	*No*
Western Methods	4	14
Eastern Methods	2	2

Describe Briefly

Western Methods

Annual 1
Local management and head office 1

Eastern Methods

Quarterly 1
Industrial relations director reviews organization chart once a month and makes recommendations to general manager 1

OREGON

Divison of Functions Satisfactory?

	Yes	*No*
Western Methods	14	10
Mixed Methods	2	....

What Are Advantages?

Western Methods

Specific Responsibiilty 4
Simplicity 2
Flexibility 2
Fits operation and personnel 2
Functions defined 1
Adaptability to all work..... 1
Stopped overlapping 1
Close informal relationship.... 1
Loyalty of personnel..... 1

Mixed Methods

No overlapping of authority 1
Production and costs satisfactory 1

What Disadvantages?

Western Methods

Lacks functioning operation 2
Overlapping of authority..... 1
Could discourage otherwise ambitious people 1
Not too accurate..... 1

Mixed Methods

No control of inventory of work in process..... 1

System for Review?

	Yes	*No*
Western Methods	7	16*
Mixed Methods	....	2

**One plant reports "Just growed 'like Topsy,' hit or miss."*

Continued from page 36

plastics, concrete, textiles, leather, paint, glass, pulp and paper, printing.

Eastern Washington: 8 plants. Metal and wood fabrication, electric power, clay products.

Idaho: 4 plants. Metal and wood fabrication, dairy products.

Utah: 18 plants. Metal and wood fabrication, oil, chemicals, other products.

Colorado: 6 plants. Metal, 5; wood products, 2; rubber goods, 1.

To determine whether Western operating methods are as efficient as Eastern, reports from the plants were segregated according to the origin of their methods and systems. In some cases, the methods are a combination of Eastern and Western ideas, and are so shown.

A questionnaire was prepared by the editorial staff of *Western Industry* from ideas submitted by management consultants and professors of business administration and engineering from a number of universities in the West. In this we enjoyed the cooperation of E. A. Williams, assistant to the works

211 plants report on division of functions

Division of Functions

Continued from page 37

Describe Briefly

Western Methods

Regular meetings of supervisors	1
Monthly meetings of supervisors for review	1
Check through card system at intervals	1
Committee holds weekly reviews	1
Follow competitors	1
On opportunity basis	1

Mixed Methods

Make changes when necessary	1

WESTERN WASHINGTON

Division of Functions Satisfactory?

	Yes	*No*	*Partial*
Western Methods	53	14	1
Eastern Methods	7	1	....
Mixed Methods	2	2	....

What Are Advantages?

Western Methods

Flexibility	4
Simplicity	3
Proper sequence	2
Efficient but not rigid	1
Following generally continuous process	1
Foremen trained for duties	1
Allows quick change and fill-in during absence of regular employees	1
Facilitates supervision, places responsibility	1
Centers responsibility	1
Growing organization, and division of functions constantly changing	1
Each supervisor has own department for which he is responsible	1
Individual development and expression	1
Reduction of personnel	1
Men highly trained and division follows natural line	1
Satisfactory to all concerned	1

Eastern Methods

Smooth flow of production	1
Simplicity and clarity	1
Simplicity	1
Management knows what goes on	1

What Are Disadvantages?

Western Methods

Too much supervision	1
Constant supervision necessary to avoid confusion	1
Lack of skilled help	1
Overlapping of functions	1
Too much paper work	1
Workers' inflexibility	1
Overload by men	1
Whenever employees leave, production stops	1
Too much confusion and mistakes	1
Executives overlap	1

System for Review?

	Yes	*No*
Western Methods	18	45
Eastern Methods	1	6
Mixed Methods	3	1

Describe Briefly?

Western Methods

Executive meeting monthly	2
Semi-monthly meetings	1
Conference	1
Weekly meetings with president	1
Check P. & L. statements and weekly meetings	1
Whenever necessary executives decide	1
Executive meetings	1
Semi-annual review	1
Correct system yearly	1
Yearly report by Dir. of Labor Relations, reviewing past practices and making recommendations to management for needed improvement	1
Constant review of duties and responsibilities of supervisory personnel	1
Check each dept. for faults and try to remedy	1
Constant cost supervision	1
Meet in emergencies if necessary	1
Only when crisis occurs	1
Constantly reviewed	1
Supervision and inspection by production manager	1

Mixed Methods

Reviewed by executives semi-annually	1
Dept. heads meet at regular intervals	1
Centralized owner and mgr.	1

EASTERN WASHINGTON

Satisfied With Division of Functions?

	Yes	*No*
Western Methods	2	3
Mixed Methods	2	....

What Are Advantages?

Western Methods

Always looking for improvement	1

What Are Disadvantages?

Western Methods

Responsibility stifles initiative	1

System for Review?

	Yes	*No*
Western Methods	2	4
Mixed Methods	1	1

Describe Briefly

Western Methods

As occasion arises	1
Conference of supervisors	1

Mixed Methods

Executive conference	1

UTAH

Satisfied with Division of Functions?

Yes	*No*	*No Answer*
16	1	1

What Are Advantages?

Supervisors and assistants in each department	1
Changes as necessity arises	1
More personal contact	1
Closely knit, good coordination	1
All control from management level	1
Jobs clearly defined and all men are specialists	1

What Are Disadvantages?

Loopholes permit errors in follow-up	1
President has thorough knowledge and takes authority from foreman	1
Vulnerable in event of loss of key executives	1
Some overlapping	1

System for Review?

Yes	*No*
8	8

Describe Briefly?

Monthly meetings with department heads	2
Constantly scrutinized and revised	1
Daily trips through factory and perpetual inventory	1
Inspection from home office	1
Monthly supervisors meetings	1

IDAHO

Satisfied with Division of Functions?

Yes	*No*
4	....

What Are Advantages?

Flexibility	2
Fits organization	1
Made aware of costs	1

System for Review?

Yes	*No*
....	4

COLORADO

Satisfied With Division of Functions?

Yes	*No*
4	1

What Are Advantages?

No misunderstandings	1
Specialization and coordination	1
Satisfactory	1
Smooth, no duplication	1

System for Review?

Yes	*No*
2	2

manager, Lockheed Aircraft Corporation, and past president of the Los Angeles chapter, Society for the Advancement of Management (we neglected to mention Mr. Williams in the March issue); Louis E. Davis, assistant professor of mechanical engineering, University of California, Berkeley, and the following management consultants:

San Francisco: Al Werolin, Pacific Coast vice-president and partner, McKinsey & Company; E. D. Hayward, vice-president, Production Management Engineering Associates; Arthur Dobson; Walter G. Collins of Bunker & Collins; David Amour of Amour, Timber & Associates.

Los Angeles: Benjamin Borchardt, of Benjamin Borchardt & Associates; C. W. S. Parsons.

Replies to the questionnaire were obtained by personal interviews with company executives by consultants, graduate and undergraduate students in business administration and engi-

neering, and in one case by members of the faculty themselves. The questionnaires were then turned over to

Continued on page 40

COMMUNICATIONS

Does Each Person Have a Clear Idea of the Desired Manner of Carrying Out His or Her Duties?

Are Instructions for Performing All of the Functions and Duties in the Plant Reduced to Writing, or in Charts, and Available to All Concerned?

MANUALS

Do You Have an Organization Manual Defining Duties, Responsibilities, Authority? Do You Have the Other Manuals Listed Below?

SOUTHERN CALIFORNIA

Clear Idea of Duties?

	Yes	No	Partially
Western Methods	26	1	2
Eastern Methods	7	1	....
Mixed Methods	4	....	....

Instructions in Writing?

	Yes	No	Partially
Western Methods	17	8	3
Eastern Methods	4	4	....
Mixed Methods	1	3	....

Organization Manual

	Yes	No	Partially
Western Methods	14	13	1
Eastern Methods	4	3	....
Mixed Methods	1	3	....

Policy Manual?

	Yes	No	Partially
Western Methods	13	14	1
Eastern Methods	5	3	....
Mixed Methods	2	2	....

Procedure Manual?

	Yes	No	Partially
Western Methods	12	13	1
Eastern Methods	4	4	....
Mixed Methods	1	3	....

Job Description Manual?

	Yes	No
Western Methods	23	5*
Eastern Methods	5	3*
Mixed Methods	4	....

**One in course of preparation.*

New Employee Manual?

	Yes	No
Western Methods	15	15
Eastern Methods	6	1
Mixed Methods	3*	1

**One plant gives copy of contract.*

Other Manuals?

Western Methods

Sales	3
Safety	2
Standards	1
Foreman's	1
Product	1
Technical Data	1
Engineering	1
Distribution for dealers	1

Eastern Methods

Standard Practice	1
Factory Accounting	1
Management	1

Mixed Methods

Standards	1

NORTHERN CALIFORNIA

Clear Idea of Duties?

	Yes	No
Western Methods	11	11
Eastern Methods	4	....

Instructions in Writing?

	Yes	No
Western Methods	14	17
Eastern Methods	3	1

Organization Manual?

	Yes	No
Western Methods	4	17
Eastern Methods	3	1

Policy Manual?

	Yes	No
Western Methods	4	17
Eastern Methods	3	1

Procedure Manual?

	Yes	No
Western Methods	6	15
Eastern Methods	3	1
Mixed Methods	1	....

Job Description Manual?

	Yes	No
Western Methods	7	15
Eastern Methods	3	1

New Employee Manual?

	Yes	No
Western Methods	6	16
Eastern Methods	3	1*

**Being prepared.*

Other Manuals?

Western Methods

Detailed study of manufacturing Methods	10
Personnel	1

Eastern Methods

Budgetary manual	1

OREGON

Clear Idea of Duties?

	Yes	No
Western Methods	15	2
Mixed Methods	2	....

Instructions in Writing

	Yes	No
Western Methods	6	18
Mixed Methods	1	1

Organization Manual?

	Yes	No
Western Methods	4	19
Mixed Methods	1	1*

**Because of union dispute, government mediator evaluated operations in April, 1948.*

Policy Manual?

	Yes	No
Western Methods	4	18
Mixed Methods	1	1

Procedure Manual?

	Yes	No
Western Methods	4	19
Mixed Methods	1	1

Job Description Manual?

	Yes	No
Western Methods	3	18
Mixed Methods	1	1

New Employee Manual?

	Yes	No
Western Methods	4	20*
Mixed Methods	1	1

**One plant reports instructions given to employees by older workers.*

Other Manuals?

	Yes	No
Western Methods	3	15*
Mixed Methods	....	2

**One plant reports "well-established training and living policy instead of manuals."*

WESTERN WASHINGTON

Clear Idea of Duties?

	Yes	No
Western Methods	58	8

Continued on page 40

Continued from page 39

Western Industry for tabulating.

Our volunteer interviewers consisted of the following:

Southern California. Consultants: Benjamin Borchardt & Associates; Chas. T. Gilliam & Associates; Vernon Keeler & Associates; Don Saurenman Company. Graduate students in business administration under the direction of Melvin E. Salveson, lecturer in production management, College of Business Administration, University of California at Los Angeles.

Northern California. Consultants: E. D. Hayward, vice-president, Production Engineering Management Associates; Harry T. Raynor; Thomas W. Maxwell, University: Students in mechanical engineering, under the direction of D. G. Malcolm, assistant professor of mechanical engineering, University of California, Berkeley.

Oregon. Consultants: Charles W. English, president, Production Engineering Management Associates; Laurin E. Hinman; Thomas R. Miles. University: Members of the industrial engineering staff at Oregon State College, under the direction of Robert N. Lehrer, assistant professor, department of industrial engineering, Oregon State College; a student at University of Oregon, under the direction of C. F. Ziebarth, professor of business administration.

Washington. Consultants: Stephen Batori and Company; Edwards R. Fish; Kenneth E. Fosnes; Joseph B. Ward. University: Students in business administration, University of Washington, under the direction of Albert N. Schrieber, assistant professor of management, College of Business Administration; R. O. Batdorf, field engineer (Spokane) State College of Washington, member of that col-

Western Industry's survey makes clear how

Continued from page 39

Eastern Methods	17	....
Mixed Methods	4	....

Instructions in Writing?

	Yes	No	Partial
Western Methods	14	48*†	3
Eastern Methods	4	4	....
Mixed Methods	....	....	1

*Standard process chart being made up to do away with double handling.
†One plant reports "Unnecessary."

Organization Manual?

	Yes	No
Western Methods	16	48*†
Eastern Methods	3	5
Mixed Methods	1	3

*One plant reports partial manual.

Policy Manual?

	Yes	No
Western Methods	9	55
Eastern Methods	4	4
Mixed Methods	1	3

Procedure Manual?

	Yes	No
Western Methods	5	55*
Eastern Methods	4	4
Mixed Methods	1	3

*One plant has partial manual.
†Manual in process.

Job Description Manual?

	Yes	No
Western Methods	12	49*†
Eastern Methods	4	4
Mixed Methods	1	3

*One plant reports "Too many different types of production.
†One plant has manual in process.

New Employee Manual?

	Yes	No
Western Methods	8	54*†
Eastern Methods	1	8
Mixed Methods	1	2

*One plant reports "explained by manager."
†One plant has manual in process.

Other Manuals?

	Yes	No
Western Methods	5	26*
Eastern Methods	2	2
Mixed Methods	....	....

Describe Briefly

Western Methods

Engineering procedure	1
Accident prevention	1
Standard building and electrical code	1
Sales manual to customers	1
Fire control	1
Salesmen's catalog	1
Personnel and promotion	1
Service and Installation	1
Text and handbooks of chemistry	1
Traffic	1
Shipping	1

Eastern Methods

Sales	1
Safety and suggestion	1

EASTERN WASHINGTON

Clear Idea of Duties?

	Yes	No
Western Methods	4	2
Mixed Methods	2	....

Instructions in Writing?

	Yes	No
Western Methods	2	4
Mixed Methods	1	1

Organization Manual?

	Yes	No
Western Methods	3	3
Mixed Methods	1*	1

*Partial, by memo.

Policy Manual?

	Yes	No
Western Methods	1	5
Mixed Methods	1	1

Procedure Manual?

	Yes	No
Western Methods	1	5
Mixed Methods	1	1

Job Description Manual?

	Yes	No
Western Methods	4*	2
Mixed Methods	1	1

*One manual being created at time of survey.

New Employee Manual?

	Yes	No
Western Methods	3*	2
Mixed Methods	1	1

*One manual being created at time of survey.

Other Manuals?

	Yes	No
Western Methods	2	3
Mixed Methods	....	1

Describe Briefly

Western Methods

Accounting and Sales	1

IDAHO

(All methods listed Western)

Clear Idea of Duties?

Yes	No
3	....

Instructions in Writing?

Yes	No
1	3

Organization Manual?

Yes	No
1	3

Policy Manual?

Yes	No
2	2

Procedure Manual?

Yes	No
2	2

Job Description Manual?

Yes	No
1	3

New Employee Manual?

Yes	No
1	3

Other Manuals?

Yes	No
1	2

UTAH

(Origin of methods not specified)

Clear Idea of Duties?

Yes	No	No Answer
17	....	1

Instructions in Writing?

Yes	No	No Answer
8	9	1

Organization Manual?

Yes	No
6	12

Policy Manual?

Yes	No
7	11

Procedure Manual?

Yes	No
5	12

lege's division of industrial services.

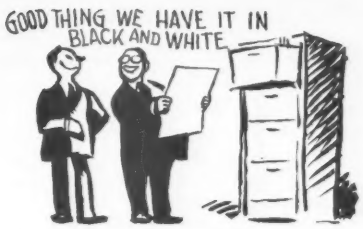
Idaho. Consultants: Robert L. Hamersley & Associates.

Utah. University: Students in management policies, College of Business, University of Utah, under the direction of E. C. Lorentzen, head of the Department of Management, and El-Roy Nelson, director of the Bureau of Business and Economic Research.

Colorado. Consultants: R. W. Becker and Frank Pingree, Technical Service Company; Robert M. Razor. University: Students in business administration, University of Denver, under direction of Paul R. Merry, Bureau of Business and Social Research.

There are a number of other competent, reliable and experienced consultants in the West, whose services were not utilized for this survey for one reason or another. Consequently the names of consultants appearing in this article should not be considered a complete "Who's Who" by any means.

To everyone who reads the results of this survey may come the thought, "But my business is different." Of course there are plenty of reasons why things that are intelligent practice in a cannery would seem silly in a lumber mill, and accepted methods in metal fabrication shops which would be suicide in processing chemicals. Nevertheless the problems are basically the same, and *Western Industry* believes that every reader will find plenty of information in this series of articles



which will be invaluable to him.

Obviously it would have been desirable to classify the plants according to types of operations and group them as to size, but this would have involved tabulating operations beyond the capacity of our staff at the moment. Later on we may be able to do some reclassifying.

Western plants handle their communications

Job Description Manual?

Yes	*No*
5	12

New Employee Manual?

Yes	*No*
6	10

Other Manuals?

Yes	*No*
4	11

Describe Briefly

Safety	2
Sales	1
Production	1
Procurement	1
Remuneration	1
Inventory Control	1
Distribution	1
Credit and Collection	1
Accounting	1
Union Agreement	1

COLORADO

(All methods listed Western)

Clear Idea of Duties?

Yes	*No*
5	1

Instructions in Writing?

Yes	*No*	*Partial*
4	1	1

Organization Manual?

Yes	*No*
2	2

Policy Manual?

Yes	*No*
3	2

Procedure Manual?

Yes	*No*
2	2

Job Description Manual?

Yes	*No*
3	2

New Employee Manual?

Yes	*No*
3	2

Other Manuals?

Yes	*No*
1	....

Describe Briefly?

Accounting	1

Easterners come West to learn the technique of fabricating large diameter steel pipe for high pressure transmission of natural gas. T. R. Rooney, vice president of Consolidated Western Steel Corp., greets R. M. Overton, assistant vice president of National Tube Co., who heads 43 employees of that firm sent here from Pittsburgh, Pa., to observe pipe fabrication in Consolidated's South San Francisco plant.

Planning Pays Off In Shrinking Big Cylinder Liner

NO COMPLEX football play was ever executed with more intense activity—or planned and coordinated more carefully in advance—than the recent shrinking of a huge 4,500-pound steel cylinder around its bronze liner at the Sunnyvale, Calif., plant of Westinghouse Electric Corporation.

This cylinder is the main part of the operating mechanism of a large 13-foot butterfly valve, one of four identical units built at the plant for the new Cresta and Rock Creek hydroelectric stations being constructed on the Feather River by the Pacific Gas and Electric Company.

Unusual Operation

The process of heating one piece of metal and then cooling it to make a tight fit around another, however routine under ordinary circumstances, presented unusual problems in this case because of the sheer size of the pieces involved. Before shrinking of the first cylinder was attempted, extensive discussions were carried on between plant engineers, production men and inspectors. The method finally chosen combined techniques which already had been used successfully at the plant with such apparatus as large gears and turbine disks.

1/20" Clearance

With both pieces at ambient temperature, the "interference" or amount the liner's outside dimension exceeded the cylinder's inside dimension—was from .007 to .011 inches. To expand the outside cylinder sufficiently to enable it to be slipped over the liner, it was decided to heat the cylinder to 350 degrees Fahrenheit above ambient temperature.

With due allowance for a slight drop in temperature as soon as the cylinder was removed from the oven, it was computed that the inside dimension would be increased by more than .050 inch.

This clearance, which ordinarily would be regarded as ample for shrinking of smaller units, did not provide much leeway for the long "drop" over the liner, which stands eight feet, six and a half inches high and has a diameter of 26⅝ inches.

Rates of Expansion

Furthermore, the problem was complicated greatly by the considerable difference in the coefficients of expansion between the two metals. This factor, for the bronze liner, was .000013, almost twice that of the cast steel cylinder.

Accordingly, there was the danger that heat from the steel would be transmitted to the bronze so rapidly that the two units might "freeze" together irrevocably while the cylinder was in the process of being slipped over its liner.

A Hazard

Even when the two units were in place, there was a possibility that the bronze might be heated sufficiently to cause it to over-expand within the steel cylinder. This would cause the liner to "buckle" so that its inside surface would be wavy.

In addition, such an expansion against the stronger metal might "crush" the bronze—that is, destroy its characteristics so that its diameter would be affected. The result of this mechanical change in the liner would make it loose within the cylinder when both metals finally had cooled.

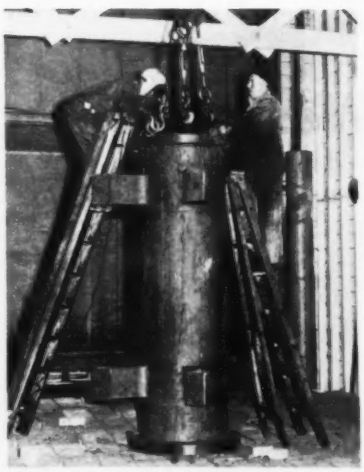
Cooling Problem

As a possible means of eliminating some of these problems, consideration had been given to cooling the liner instead of heating the cylinder. However, this method, which works well on smaller units, was not considered feasible in this case. The smaller clearance from contraction of the liner was regarded as inadequate for the long "drop" required. Even for such small clearance, an enormous quantity of dry ice would have been required to pack the liner.

Successful execution of the job, it became apparent, would require heating the cylinder—but keeping the bronze liner cool inside.

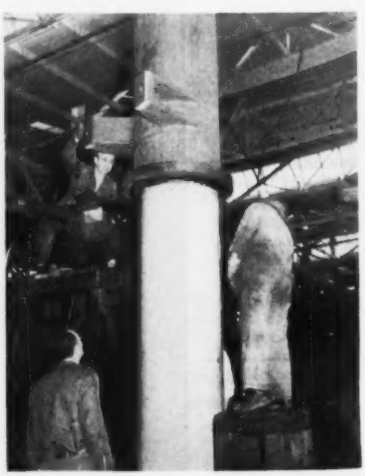
Expansion and Contraction

A further problem to consider was that of the longitudinal expansion and contraction of the metal. The cylinder would gain considerably in length when heated—about 3/16 inch. If the cylinder were to cool all over at the same time, it would grip the liner at



• 1. All night this 4500 lb. steel cylinder soaked in the oven's 410°F. heat. As soon as it was removed, two workmen prepared it for its trip to the waiting bronze liner. Speed and accuracy were essential to line up vertically for hoist to move so that minimum of heat would be lost.

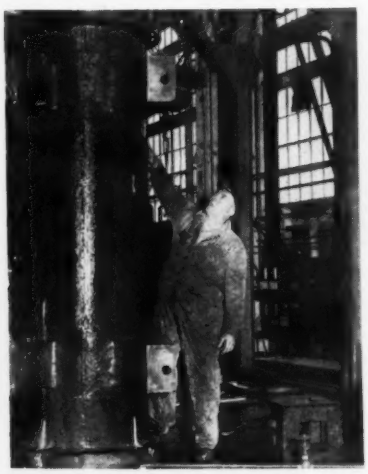
• 2. Heating expanded the cylinder to a diameter 1/20" larger than the liner. Precise alignment was vital. Liner was coated with an "anti-seize" compound to reduce friction. To hoist, move, and drop the cylinder around the bronze liner accurately took less than seven minutes.



Avoids Freezing, Buckling, Also Crushing the Job

• 3. Then the cooling-off process started, by pumping tap water in at the bottom while the workmen played water from hoses in the middle of the cylinder. Liner had to be kept cool lest it be injured by heat transmitted from the steel cylinder around it, or seize it at either end first.

• 4. Thirty minutes later, after hundreds of gallons of water have flowed, the cylinder has cooled off. By this time it has tightened evenly around the bronze liner and the entire unit was ready to be installed in the operating mechanism of a thirteen foot butterfly valve for P. G. & E.



both ends, and the effect would be to "telescope" the liner as it cooled, to a degree which would buckle the liner's inside face.

Cooling Plan

As a result, it was decided that, while the entire liner would be kept cool after the cylinder was slipped over it, the cylinder would be cooled first in the middle, and then gradually toward both ends. This would enable the steel to grip the bronze in such a way that the cylinder's length would be approximately normal by the time its two ends contracted.

The three critical parts of the job, then, were: first, to place the heated cylinder over the liner as quickly as possible, in order to have maximum working clearance; second to keep the liner cool; and third, to cool the cylinder from the middle out.

Trained Personnel

Before any attempt was made to shrink the cylinder around the liner for the first time, all personnel concerned in the operation were carefully instructed in the entire process. In effect, they were "rehearsed" to do the job with virtually split-second timing. The dispatch with which the job was done—on the first unit and subsequently on three identical ones—was attributed to the great amount of preparation done in advance.

Getting Under Way

At midnight, the steel cylinder was placed in the big gas-heated oven in Sunnyvale's Building 41. In order to save time later, it was carefully set level in two planes. During the night, the temperature was gradually raised to 410 degrees Fahrenheit. The cylinder then "soaked" in this temperature for four hours.

Promptly at 9:00 the next morning, according to schedule, the oven doors opened, and the cylinder was taken out on a huge flat car. From this point on, events moved quickly. Ladders were placed against the cylinder, and two workmen, wearing protective gloves, hooked up the rigging which was waiting. At the same time, a quick check was made with levels to be sure that the cylinder was still truly perpendicular and thus would go around the liner without trouble.

Doing the Job

In the meantime, the bronze liner had been set up to a true perpendicular position at the hydraulic testing stage, about 100 feet away. Both top and bottom were covered with a plate. Water was piped to go into the bottom and out at the top, through these plates, and the liner was already filled with water at tap temperature. The liner was covered with a special "anti-seize" lubricating compound, and the necessary working stages were set up alongside.

It took only a few seconds to move the cylinder with a crane to a point directly over the bronze liner. With technicians and engineers sighting from four sides, the cylinder was positioned precisely over the liner. The clearance between the outside diameter of the liner and the inside diameter of the heated cylinder was only a fortieth of an inch. Once lined up, the cylinder was dropped rapidly over the liner, traveling the entire distance in less than 15 seconds.

In Seven Minutes

The elapsed time, from the removal of the cylinder from the oven to its placement around the liner, took less than seven minutes. However, the equally important job of cooling the two units could not be done so quickly. As soon as the cylinder was in position, workmen fastened a water outlet pipe to the top of the liner and water was circulated through it to carry away heat.

Simultaneously, as planned in advance, workmen sprayed water from hoses around the middle of the cylinder. As the middle cooled and tightened on the liner, the water was directed toward the top and bottom. In this way, after half an hour of careful cooling, the cylinder made a tight, even grip on the bronze liner.

Easy When You Know How

The accompanying pictures show various key steps of the process as performed on the first unit to be completed. The same procedure was subsequently followed with success on the hydraulic operators for the other 13-foot butterfly valves built for P. G. & E.

Take Fluid Power to Your Job In Either Field or Factory

By HERB VICKERY
General Manager, The Rucker Company
Emeryville, California

MODERN industry with its ever increasing cost of operation is constantly looking for new and better methods, which will permit employees to do more work in less time with less effort. Any new type of machine which will reduce operating costs or give more trouble-free operation is sure to be considered favorably.

Changing conditions of modern industry require that most machinery be capable of varying its rate of operation to accommodate either different types of materials or products or changes in materials or products which occur in the normal course of plant operation. This means that some type of variable speed drive must be incorporated in the production process to permit handling these changes which may occur either hourly, daily, or at sometime during the production cycle.

No development within recent years offers so many possibilities for increasing production, eliminating down time and reducing costs, as the constant displacement fluid motor, when applied for machine drives.

A few of the advantages of such equipment are:

Extremely wide speed range with infinitely variable speed over the entire range.

Rapid start-stop and reverse.

High starting, stalling and running torque.

Ability to absorb and withstand shock loads.

Waterproof, dustproof and explosion proof construction.

Unlimited flexibility of control either directly, remotely or automatically in sequence with other operations.

Low maintenance.

Low first cost.

Basically, fluid motors are totally enclosed units operating on the very finest type of turbine oil under high pressures. They are precision built and their construction permits operation at pressures up to 5,000 p.s.i. There are three principal types of constant displacement fluid motors: gear type, piston type and vane type.

THIS IS the third and last of a series of articles by Herb Vickery. "Pneumatic Equipment Can Lighten Your Heavy Production Problems" appeared in *Western Industry* for February; "Hydraulic Power Packs a Punch to K-O Your Plant Problems" appeared in last month's issue.

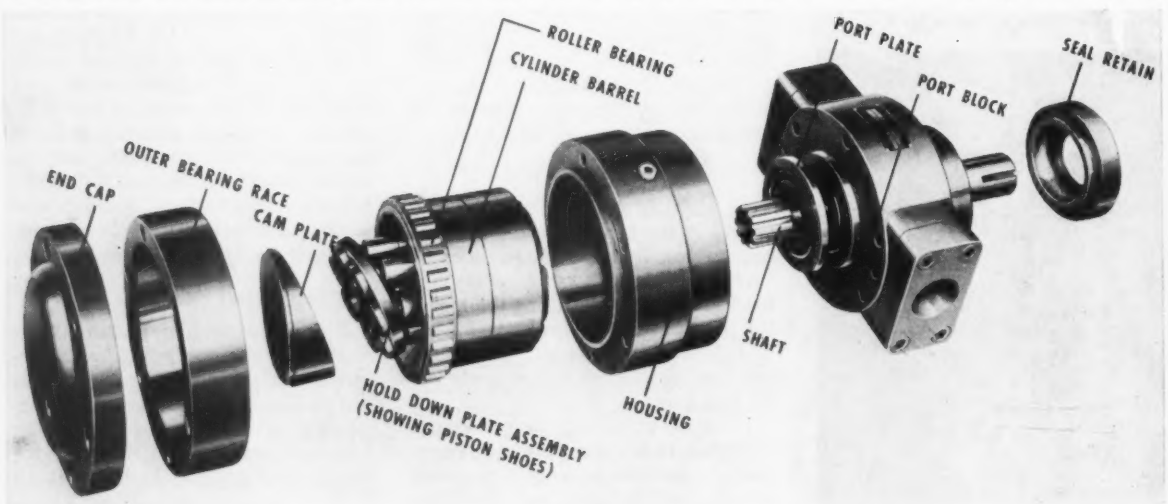
Gear type fluid motors are normally made in the lower hp. ranges and consist of a set of meshing gears enclosed in a case which withstands pressure of the operating fluid. When fluid is admitted to the case, action of the fluid against teeth of the gears causes them to rotate, thereby imparting motion to the drive shaft.

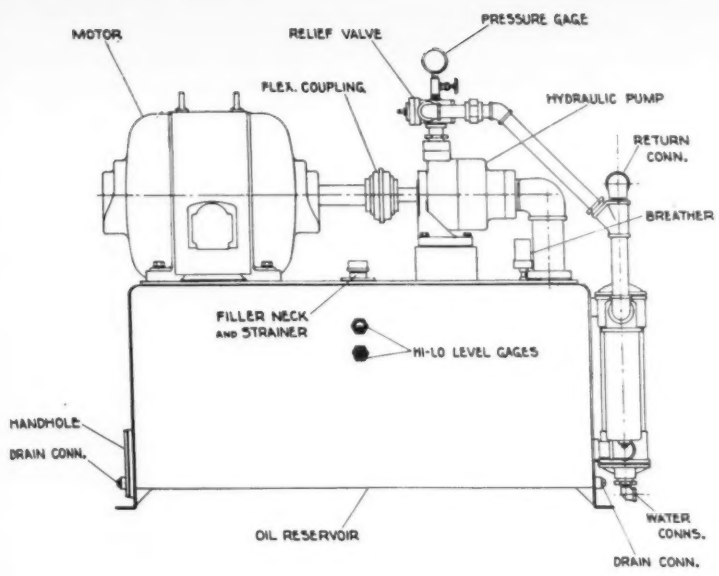
Gear type fluid motors, because of their construction, are normally not used for speeds lower than 200 rpm. or higher than 1,200 rpm. Specially constructed units may vary somewhat from the above specifications.

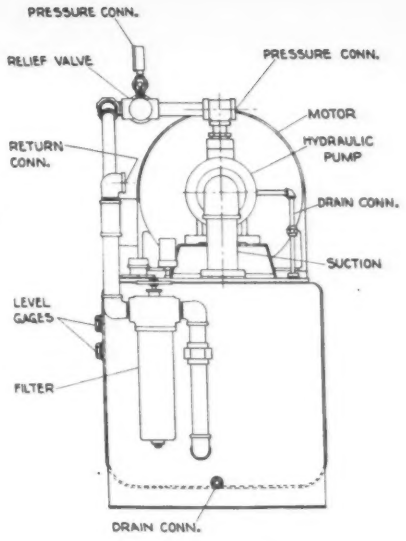
Piston type fluid motors consist essentially of a set of pistons operating in cylinders to either rotate the entire assembly containing the pistons or by some other arrangement to rotate a crank shaft. Whereas gear type fluid motors normally operate only up to 1,000 p.s.i., piston type fluid motors may operate up as high as 5,000 p.s.i. They are available as high as 160 hp. or larger depending upon the type.

Various types of construction are available with either an axial type piston motor or a radial type piston motor. The axial piston motor, as presently manufactured, has a number of operating advantages over the radial type and, for that reason, is most commonly used. Normal operating speeds are from 200 rpm. up to 3,000 rpm. or higher on special units.

• This exploded view shows an axial piston, constant displacement, high pressure, high volume, hydraulic pump for heavy duty.







STANDARD UNIT

• This is a typical unit, having a 10 h.p. 1200 r.p.m. 220/440 V. 3 phase 60 cycle motor directly connected to a 25 g.p.m. pump.

For factory installations, to power conveyor systems or other power-consuming units, this is the type of equipment to install.

The vane type fluid motor, with its extremely well balanced construction, permits operating speeds as low as 5 to 10 rpm. It consists essentially of a set of vanes operating in a rotor working within a case. The pressure of oil against the vane causes rotation of the shaft.

Simple design of this type of fluid motor permits extending the vane area so that the torque rating of the motor may be very high in proportion to its size. For example: motors having a torque rating of 1,100 in. lbs. of torque per 100 p.s.i. and operating at pressures as high as 2,000 p.s.i. are available. Such fluid motors are capable of developing 250 hp.

It is obvious that with the variety and types of fluid motors available and with the almost countless number of applications possible, considerable thought and analysis must be given to each individual problem before making a selection of the fluid motor which is best adapted to that specific operation.

Careful Installation

It is equally apparent that a fluid motor which is not properly installed or applied will not give satisfactory results. Great care should be taken in the development of the hydraulic circuit to assure proper operation of the fluid motor, as well as the other components of the hydraulic system.

Hydraulic systems, when properly designed, tend to absorb and in many ways eliminate shock. However, improperly designed hydraulic systems can impose undue stresses of their various components. This damages or causes failure in the various pumps, valves, cylinders and fluid motors. Such instances as split pipes or tubes and shattered valves are in many cases direct results of improper planning.

Industrial Applications

Some of the applications on which fluid motors have been used to give a better operation and increase production are described to indicate a wide range of applications possible.

A manufacturer of a large band saw for the lumber industry applied fluid motors in driving the feedrolls which carry the cants to the saw. This permitted the operator to have fingertip control of the speed of sawing, as well as instant reversibility.

Since the speed of feed of the material to the saw must be dependent upon species of wood, water content of the wood, size of the cant being resawn and the sharpness of the saw, it is obvious that without some method of instantly changing the speed of feed maximum efficiency could not be obtained.

Instant reversibility of the feedrolls in order to withdraw a piece of material from the saw is of utmost importance. Operators using this type of resaw have reported increased production and a better grade of finished lumber as a result of fluid drive.

Another installation in the lumber industry is that of applying a fluid motor on the feedrolls of edgers which saw lumber to size after the boards come from the circular or band mill. This fluid drive permits a better control of speed of the feed into the edger saws, gives instantaneous reversibility when desired, and prevents kick backs of lumber which is not only damaging, but extremely dangerous to the edger men.

Canning and food processing industry has many applications for fluid motors because of bad steam, water and juice conditions which exist in almost all food processing plants. Numerous installations have been made on conveyors for permitting variable speed drives under adverse operating conditions. The high starting, stall and running torque of fluid motors is particularly beneficial under these conditions.

A conveyor driven by a fluid motor may be stalled without any damage to the conveyor, since the torque or pulley power of the fluid motor is limited by the pressure of the oil in the system. This provides a very desirable safety arrangement and eliminates the necessity of shear pins and other make-shift devices.

Variable Drives

Most cannery equipment requires variable speed drives because of the variety of products handled and the various grades and sizes which must be accommodated. Since fluid motors may be easily controlled remotely, it is possible to run any canning line at its maximum efficiency for any type or grade of product being packed.

Steam conditions in canneries sometimes cause serious down time problems during the operating season. Since the fluid motor is totally en-

closed, this condition does not exist when fluid drive is applied. (One installation operates continually in a bath of steam. This unit provides unlimited speed adjustments from 17 to 790 rpm.)

Where portable machinery is used, which is driven by either gasoline or diesel engines, hydraulic actuation of various parts of the machinery is extremely practical.

For example: a large manufacturer of portable oil drilling rigs uses high pressure pumps driven from the main diesel engines of the equipment to supply oil for fluid motors which operate such accessory equipment as winches, etc. This provides extremely flexible control.

Portable Installations

Other such installations are for operation of the compressors on refrigerator trucks by fluid motors driven by high pressure oils supplied from a pump attached to the power take-off of the truck. Such fluid motors can be tied in with temperature control or any required method of cutting the compressor in and out of service.

Chemical plants with their ever changing processes and requirements for explosion and dustproof construction are ideal spots for the application of fluid motors. One such large plant uses a complete hydraulic system for the processing of a very hard to handle chemical.

Due to the many unknowns in chemical process work, it is highly desirable to have a system of speed control which may be varied to suit any new or unknown requirements. Fluid motors offer just such a control since the speed of the fluid motor is proportional to the volume of oil flowing through it, and torque of the fluid motor is proportional to the operating pressure of the system.

Farm equipment is making increased use of fluid motors. One large manufacturer has applied positive displacement fluid motors to the propelling mechanism of a large grain and rice harvester. This gives complete speed control from zero up to full speed and permits the operator to govern speed of the machine in exact accordance with requirements for cutting a particular type of grain. Operator controls have been greatly simplified due to this hydraulic operation, and the operator can now control this machine under the worst possible conditions found in rice fields of California.

Another application of hydraulic motors is on cutter blades and header of grain harvesters.

Machine Tool Uses

Application of fluid motors to machine tools for variable speeds of feeding material or cutting is practically unlimited because the entire speed of operation of a machine, as well as its sequence of operations, is instantly adjustable by the operator. A far more flexible and productive machine can be built where fluid drive is employed.

One large valve manufacturer has just completed two large automatic lapping machines, which employ fluid motors to give a reciprocating lapping motion to the plugs of the large valves being lapped. Speed of lapping, number of reciprocations per minute and degree of progression of lapping must be varied depending upon the size of the valve and the materials employed in its construction.

It is necessary that the operator be able to establish any set of lapping speeds and progressions at will. This is easily accomplished through use of fluid motors and a properly designed hydraulic system. With conventional mechanical or electrical drive, such results would be impossible. A finished job is accomplished rapidly, efficiently and with a final finish which is comparable to hand lapping.

Fluid motors for variable speed spindle drives and for variable speed feeding of material are easily applied. Where indexing tables or feeding operations must be easily and accurately controlled, fluid motors with their rapid start, stop and reverse offer the ideal motive power.

Wide Adaptability

These applications are picked at random from a wide variety of installations, but serve to indicate adaptability of fluid drives to unusual and often critical conditions. It should be borne in mind that use of fluid motors is predicated upon a properly designed, clean and correctly installed fluid power system. Improper selection or application of components will limit effectiveness of the fluid motor.

Proper regard to requirements of speeds both maximum and minimum, torques both maximum and minimum, and sequence of operations required to perform desired results must be ascertained before a properly operating fluid power system can be established.

When this has been done, users of fluid power can look forward to efficient, flexible and trouble-free operation on very nearly any type of hard-to-handle drive problem.

• Here's the typical unit, shown above, "in the flesh." Over 40 models are available to meet individual applications. Each installation requires some study.

• The table shown below will enable you to calculate practically any size unit you may desire. Stock models are available with pressure ratings from 100 to 5,000 p.s.i., and with from 2 to 150 h.p. Special models have up to 300 h.p. rating. This chart applies to both stationary and portable units as shown at right.

RUCKER HYDRAULIC POWER UNITS

CONSTANT DISPLACEMENT MODELS

½ to 150 HP 2-116 GPM 100-5000 PSI

OIL CAPACITY -GALLONS-	HP RANGE	G.P.M. RANGE	PRESSURE RANGE -PSI-
15	½ to 5	2 to 8	100 to 3500
25	¾ to 7½	2 to 14	100 to 3500
50	1 to 15	5 to 30	100 to 2500
75	3 to 25	5 to 48	100 to 5000
100	10 to 30	8 to 46	100 to 5000
150	5 to 30	17 to 87	100 to 4000
225	10 to 75	17 to 116	100 to 5000
300	40 to 100	30 to 84	700 to 4000
350	50 to 150	81 to 113	700 to 2000

SPECIAL MODELS TO 300 HP

ALL MODELS WITH OIL COOLERS OR HEATERS AND THERMOMETERS AS OPTIONAL EXTRAS.

ALSO WITH MULTIPLE PUMPS, VARIABLE VOLUME AND PRESSURE COMPENSATING PUMPS, AND HIGH-LOW PRESSURE SYSTEMS.

DIESEL AND GASOLINE ENGINE DRIVEN MODELS.

• Variable speed and high torque are provided by fluid motors on this portable drilling rig. Tower folds over cab, and truck takes power source along with it.

NO RESISTANCE TO BENDING...

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This tube can be bent by hand with little effort. And because of its ductility and soft temper, Dryseal Tube will not split on the ends when flared for compression fittings.

Another important Dryseal feature is the absence of moisture. This tube is bone-dry inside from one end to the other. Careful dehydration and precise mechanical sealing at each end see to that. Also, the special crimp seal used is no larger than the diameter of the tube, so that it will pass through any opening large enough for the tube itself.

Dryseal is made to new, more economical dimensional standards with tube sizes from ⅛" to ¾" O.D. It comes neatly packed; two 50-foot coils to the carton. Carton is attractively designed so that it is easy to identify in stock. All of which makes for an easier, faster, trouble-free, quality installation.

Ask your distributor about Dryseal next time you order refrigeration tube. He has Dryseal and will give you prompt delivery.

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Transporting Workers to Hot Food Steps Up In-Plant Feeding

BRINGING the men to the food by a fast in-plant bus service is an apparently original and highly successful system used at Alcoa's reduction works at Vancouver, Washington. It overcomes the handicap of distance in a large plant, and has obvious advantages over on-the-job feeding.

The men are fed in a cafeteria for which the Aluminum Company of America spent $200,000, and which received honorable mention in a national contest conducted by Institutions Magazine in which more than 1,000 restaurants, hotels, industrial plants, schools and colleges entered.

All-Points Schedule

A bus service, during meal periods on all shifts around the clock and reaching all points within the plant is provided. The bus schedules are such that a man can leave his work area, ride to the cafeteria, wash up in the large, tiled washrooms, have his meal and return to his job all within the prescribed meal period. Men who are on a continuous 8-hour shift, in the potrooms, arrange with a fellow worker to watch their job while they are absent at meal periods.

The system is not only a more economical way of serving food but also, which is more important, provides the worker an opportunity to have piping-hot food amid pleasant surroundings. Popularity of the cafeteria with Vancouver plant workers is evidenced by the fact more than 65 per cent of them regularly patronize the cafeteria. Large numbers of Vancouver Alcoans bring their families and friends to the cafeteria for evening and Sunday dinners.

A Plus Value

An incidental value is the effect that the tidy surroundings had on workers who were inclined toward slovenliness in appearance. The first time or two in the cafeteria they may not have bothered to wash up, but before long they began to pay more attention to themselves and not only cleaned up before sitting down at table but also were more presentable while on the job.

The cafeteria, which opened October 13, 1947, shines partly from the extensive use of aluminum and partly from the light cream and off-white ceramic tile used for the dining room and kitchen interiors. A lot of Alcoa's product went into the cafeteria. Doors, window sash, screens, stairways, lighting fixtures, decorative trim, furniture and equipment are of aluminum. The metal is light, easy to handle, its non-corrosive property makes it desirable for applications where cleanliness is essential, it is easily fabricated, and the finished product has a good appearance and requires little upkeep.

Among the cafeteria features constructed of aluminum are work and vegetable tables, sinks, food counter, warming and serving tables, fume exhaust hoods, furniture and stairs. The refrigerator doors are clad with aluminum sheet. The cafeteria counter includes aluminum lowerators for trays, saucers, cup racks, and two sizes of dishes.

An Alumilite coating was used on the water cooler and cafeteria counter front to provide contrast to the bright aluminum finish on the other pieces of equipment. This Alumilite finish is an anodic coating of oxide film which is very hard and durable. The coating can be dyed any color for further contrast between finished surfaces.

Results of Planning

The arrangement of the kitchen is highly departmentalized for ease and efficiency in the preparing and serving of foods. Three separate sections, each with its own all-aluminum refrigerator, are used for the preparation and storing of dairy products, fruits and vegetables and meats. The automatic dish washing department is designed so that during rush hours dishes may be washed, sterilized and returned to the dining room without entering the kitchen.

Attractive to the eye, but more attractive from the health standpoint, is the refrigerated garbage storage. The refrigerator, separated from the kitchen, keeps garbage conditioned until disposal time.

• Here's the sanitary business end of Alcoa's in-plant cafeteria. Food goes here—

• And comes out here, in an equally sanitary atmosphere. Bus service during meal periods allow a man to wash up and have a hot meal. Worker morale has been upped.

WHEN THE FIRST TUNA WAS CANNED IN THE WEST

PACIFIC-WESTERN *geared products were already known throughout the* FOOD INDUSTRY

Even in 1903, the pioneer who first put tuna in cans could turn to "PACIFIC-WESTERN" for his geared machinery.
Today, the Pacific Coast supplies half of all U. S. fish. We work daily with this growing industry in developing all types of geared drives for food-processing plants as well as marine gears, trawl winches, and other sea-going geared products.

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GENERAL WAGE CHANGES IN PACIFIC-ROCKY MOUNTAIN REGION

NOTE: This tabulation only reports changes. Information on the large number of contracts renewed without change is unavailable. Therefore the tabulation should not be construed as an indication of the overall trend.

Compiled from various sources by Bureau of Labor Statistics, Wage Analysis Branch

(Where initials of unions are given below: A=A F of L; C=CIO; I=Independent)

	Location	Date	Amount of Increase	Name of Union & No. Employees	Related Information
ARIZONA					
Manufacturing					
Cudahy Packing Co.	Phoenix	1/50	*7c	TCWH-A—30	*Retro. 9/1/49.
Millwork and Glass Cos.	Phoenix	1/14/50	*4½c	AFGW-A—92	*Retro. 11/1/49. 1 wk. vac. 1 yr.
Mining					
4 Copper Mines	Miami area (of Ariz.)	11/49	5c	IAM-I MTC-A 2400	
CALIFORNIA					
Lumber and Furniture					
Simons Co.	San Francisco	11/ 1/49	None	C—UFW—1000	Increased co. contrib. to ins. plan. Now 3%
Harbor Box & Lbr. Co.	Los Angeles	12/ 6/49	*(1) 2½c *(2) 2½c	A—WWkrs.—145	*(1) Eff. 1/1/50 *(2) Eff. 4/1/50
Metal Working					
Consolidated Vultee Aircraft Corp.	San Diego	11/28/49	5c	I—IAM—4,300	7c in max. & min. rates; add. inc. 5c to 18c for 31 job class. Add sick leave, inc. hosp. surg. and hosp. exp.
Chambers Steel Co.	San Diego	12/ 2/49	*11c	A—BSOIW—50	Add sick leave. Add hosp. & surg. benefits
Jumbo Steel Products	Azusa	12/ 6/49	7½c	A—Mtl. Wkrs.—100	Pro-rated vac. to emp. less 1 yr. serv.
Paper and Allied Products					
Paraffine Corp.	Emeryville	12/15/49	10c-14c	A—PSPMW	Liber. hosp. plan
Stone, Clay & Glass					
21 Cos. So. Calif. Rock Products Assn.	Los Angeles and Vicinity	12/ 6/49	*2½c	I—IAM—250	*Retro. 10/1/49. Pro-rated vac. for discharged emp.
Blue Diamond Corp.	Los Angeles, Roscoe, El Monte	12/ 6/49	*2½c	I—IAM—17	*Retro. 10/1/49. Pro-rated vac. for discharged emp.
Transportation					
Richmond-San Rafael Ferries	San Francisco Bay	12/16/49	*11.2%	A—IUP A—MMP C—MEBA—125	*Eff. 12/17/49. Hrs. red. from 48 to 40
Construction					
Pile Drivers, Bridge, Wharf and Dock Bldrs.	San Francisco	11/49	7½c		Travel time changed to incl. Marine Co., in $1.00 zone
23 Cos. Sheet Metal Const. Assn., Sacramento	Sacramento	12/13/49	None	A—SMW—100	Bettered vac. provision
Service					
9 Downtown Office Bldgs.	San Diego	12/ 8/49	*5c	A—BSW—150	*Retro. 12/1/49. 15 min. rest period
San Joaquin Compress & Wholesale, etc.	Bakersfield	11/30/49	*10c	C—FTA—225	Retro. 8/15/49
COLORADO					
Food Processing					
Five Meat Packing Cos.	Denver	1/50	*1c-8c	IUOE-A	*Retro. 12/1/49 2 add. pd. hols.
Wholesale Trade					
Dairy and Ice Cos.	Colo. Springs	1/50	5c	TCWH-A—25	48 hr. men, 40 hr. women, 1½ overtime 6 pd. hols.
Denver Sand & Gravel Co.	Denver	1/16/50	10c-15c	350	
Liquor Distributing Co.	Denver	1/ 6/50*	5c	TCWH-A—75	*Eff. 1/16/50.
Transportation					
Denver-Chicago Trucking Co.	Denver	1/50*	5c	OEIU-A—60	*Retro. 12/20/49.
Gallagher Transfer Co.	Denver	12/49*		IAM-I—25	*Eff. 1/16/50. New bonus plan.
OREGON					
Manufacturing, Food Processing					
Egg Candlers and Poultry Workers	Portland	1/13/50	5c		
Oregon Egg and Poultry Dealers Assn.	Oregon	10/7/49	5c	AFL—500	Arbitration award.
Lumber and Woods Products					
So. Oregon Planing Mills	Central Point	1/12/50		L&SW-A—60	Reinstatement of wages reduced arbitrarily some time ago.
Construction					
Assoc. Concrete Prod. Manufacturing Co.	Eugene	1/ 4/50	5c	TCWH-A—55	

Labor and the Industrial West

By J. B. FITZGERALD

Western Industry's Labor Relations Analyst

Having closed hundreds of contracts including employer-paid pensions, the CIO unions were in January maybe resting, because that kind of business, so active in recent reports, was quiet following the holidays. So runs the report of the Bureau of Labor Statistics, U. S. Department of Labor, closed for publication February 1.

Pensions and social welfare insurance were the outstanding items in the November, December and January reports, and particularly in the metalworking industries.

"Contract settlements," the Bureau reports, "reached in recent weeks in the metalworking industries, which involved few large companies, continued to show a high degree of variety in the terms agreed upon.

"Less than a third of the settlements listed in this report provided for a general wage increase. About half of the agreements called for increased employer contributions to existing social insurance plans or for the establishment of new plans on a contributory or noncontributory basis. Changes in old pension plans or the setting up of new plans appear in far fewer settlements."

By major industries:

Tobacco: Cigars, 3 units, no wage increase. Two added pd. hols. one added ins. ben.

Textile: 10 units. 1 increased wages 7c. Other no general change, some adjustments, some pd. hols., betterment in vacations.

Apparel: 6 units. 3 some betterments, one 10c hr., one 5c time and 10% piece rates; 5% bonus; one add 6% piece earnings.

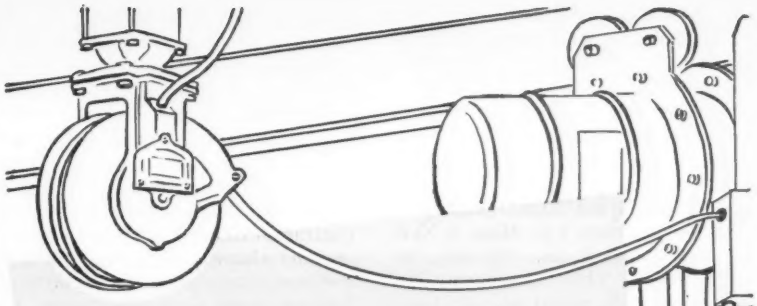
Lumber and Furniture: 10 units, four inc. wage rates, all in South. Might be minimum FLSA. Three, 3 pd. hols. One co. pd. health and ins. plan. One add. hol. now 6 pd. Lunch money inc. 25c.

Paper and Allied Products: 26 units. Eight some wage inc. Others non. One agreed to committees to work on pension plan. Several inc. vac. pd. hols. Two installed or bettered ins. program.

Chemicals and Allied Products: 25 units. 16 wage inc., largest 10c, mostly 5c. Nine, no wage inc. Four co. pd. group ins. and hos. 1 co. pd. pensions; contri. ins.

Petroleum: One large company, 8,000 employees, 2c inc. 2 wks. vac. after 1 yr. Was one week.

Continued on page 52



Job-tested Teammate for Traveling Hoists

APPLETON REELITE

TRADE MARK

TYPE "YS"

- **No Exposed Current Collectors, Trolleys or Wires**
- **Rating: 15 Amperes—550 Volts, A.C.; 250 Volts, D.C.**

Here's a rugged, automatic Reelite designed to supply uninterrupted power to traveling hoists with speed, safety and economy. It prevents cord kinks, tangles, and drag. Teamed with traveling hoists, it eliminates power breakdowns, personnel and equipment hazards.

Equipped with 45 feet of cord, the Type "YS" Reelite, mounted at a midpoint supplies continuous power to a hoist traveling 90 feet. Finest steel clocksprings keep cable under proper tension at all times. Turning on a nearly frictionless swivel base, it pays out cord in either direction to follow curves in the track. Bearings are oilless. Rings and brushes are readily accessible should service ever become necessary.

Ask your jobber about the complete line of Appleton Reelites today.

SEND TODAY!

Write for New Bulletin No. 504 giving complete information on all Reelites—"YS", Portable, Constant Duty and special types. Or see Sweet's File, P. 2a/10a.

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EXPLOSION-PROOF FITTINGS • RIGID CONDUIT AND STEEL

Continued from page 51

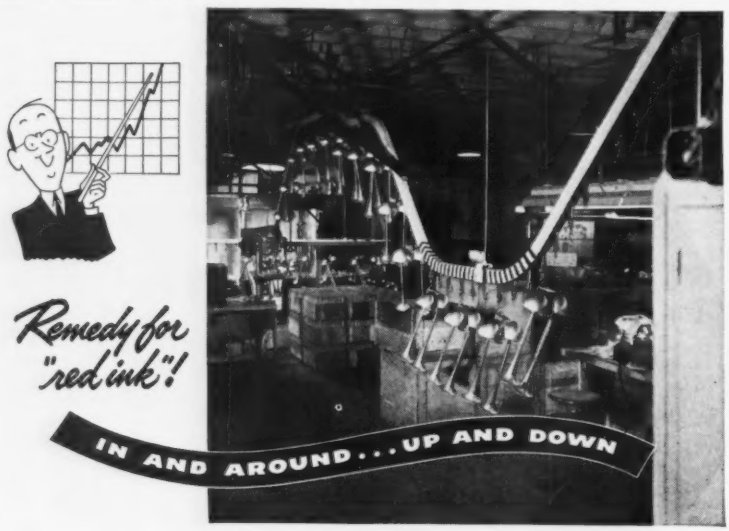
Rubber: One large company, 2,000 employees. No wage. Add. hosp. and ins. benefits.

Leather and Leather Products: 5 units, 94 individual employers. One unit, 3 employers, 550 employees 2½c-5c. 1 add. pd. hol. (total 5), two cos. 81 employers, 12,000 employees extended contracts 1 yr. Mass. & New H. Six wood heel cos., 250 emp. no wage change. Three Penn. cos. No wage, some adj. added pd. vac. hols. etc. One Kansas City Co. 200 employees, no wage or other change.

Petroleum: One large company, 8,000 employees, 2c increase, 2 weeks vacation after 1 yr.; was one week.

Rubber: One large company, 8,000 employees, no wage increase; added hospital and insurance benefits.

Leather and Products: Five shoe plants, Maine, 1,800 employees, decrease 7 per cent, arbitration. 81 shoe companies, Mass. 12,000 employees, contracts extended one year; wage reopening clause eliminated. One shoe and heel company, two units, no wage increase, some piece rates upped, increased vacation after five years, all arbitration. Six wood heel plants. No increase.



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In almost every imaginable industry, R-W Zig-Zag Conveyors are serving production and processing lines—increasing efficiency, cutting costs. Specifically designed to carry light loads through confined, crowded areas, Zig-Zag breaks costly "bottle-necks," and helps put production on a more profitable basis.

"ZIG-ZAG" Pays for Itself

Our files are filled with evidence which proves conclusively that the savings effected with R-W Zig-Zag Conveyors are so substantial the equipment quickly pays for itself —in most cases in *less than a year!* So, to put your plant in position for peak profits, convert now to Zig-Zag—the modern method for continuous overhead transportation and processing of materials. For complete details—all the facts about R-W Zig-Zag Conveyors, contact the nearest office of Richards-Wilcox.

R-W No. 2102 Hardware with No. 647 labeled "FyeR-Ward" flat surface steel door.

R-W OFFERS COMPLETE LINE OF FIRE DOORS AND AUTOMATIC FIRE DOOR HARDWARE . . . the most comprehensive line of fire door hardware, fire doors and fusible links on the market.

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INDUSTRIAL CONVEYORS & CRANES • SCHOOL WARDROBES & PARTITIONS
ELEVATOR DOOR OPERATING EQUIPMENT

Employers Still Bad Says AFL Leader So Let's Vote for Truman Again

BAD PEOPLE, probably employers and owners, during 1950 will be responsible for "grave and dangerous threats to the American labor movement." This word comes from C. J. Haggerty, Secretary of the California State Federation of Labor, in a recent publicity message. As he put it, "The plotting powers of American reaction will arouse their commercial satellites as never before in a frantic effort to impose the Corporation State upon the people of our nation."

(Come to think of it, maybe he had in mind the Republican and Democratic coalition which refused to eliminate the Taft-Hartley Act in the last Congress.)

He Says:

"We are determined to repel the attack in the year before us. And what is more affirmative, we are determined to achieve the essentials of a state devoted to the service and security of the masses of the people, a state devoted to the common good of society, a state that will recognize the responsibilities as well as the rights of our traditional free economy.

"Specifically, we shall seek first to guarantee the rights of every American worker, rights which are under constant attack by the truculent leaders of the jungle philosophy that would pit toiler against toiler in savage competition for the lowest possible wage."

Great Stuff 50 Years Ago

(That was excellent speech material 50 years ago, for a labor leader. Why does Mr. Haggerty use it today? Labor leaders are close to their people and they are smart. They know the memories of working people go from one generation to another and that old bitternesses long forgotten by the employer are easy to arouse to anger and action, not only in the old-timer but maybe his children and their children. Also, this release is good copy for all the union newspapers.)

He continues:

"We are further determined to aid the ill-housed, the ill-fed, those impoverished by illness, and those rendered helpless by age. Indeed we are determined to aid all those whose

social suffering pulls at the conscience of America."

(Noble words, those. A grand gesture. One can see the Mr. AFL of California, reaching out to pick up the social service check, and saying gruffly, with a break in his voice, "Give it to me. I like to help everybody!")

Then comes the let-down, practically a long, fast drop, like a mine elevator:

He wrote:

"In practical language" (an honest acknowledgment that the above as quoted was the usual orator's type of call to arms) "we must espouse the following aims throughout 1950:

"1. Political action at the local, state and national level.

"2. Repeal of the Taft-Hartley Act.

"3. A social security system that will offer benefits to the aged, the sick and the injured.

"4. A realistic employment program geared to the realities of consumer purchasing power." (This sentence is in strange company. Sounds like Washington New Deal gobbledygook.)

"5. Maintenance of rent controls.

"6. Adequate public housing for urban and rural communities.

"7. Water and power development for and by the American public.

"8. Federal Aid to education.

"9. A civil rights system that will assure every American of his national and constitutional heritage."

He Means

That ends the release. Translated into simple English, the whole story says: "We want Mr. Truman for another four years and we're going to work for him and his program in active "political action at local, state and national levels." That, dear readers, Mr. Haggerty really means and he and his followers will do to the utmost of their ability. How about YOU!

CORRECTION

IN THE MARCH issue, in the article entitled "Employers Losing in Pension Battle," it was incorrectly stated that at 10c employer cost per hour the pensions and insurance benefits for the first half-million workers total $5,000 an hour or $10,000,000 for a 2,000 hour year. It should have read "$50,000 an hour, or $100,000,000 for a 2,000 hour year."

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Bad Year for Tourists Prompts Trade Promotion Program

Trade Commission canvasses the Caribbean and other Latin-American Areas; 18 countries solicited by mail campaign for ECA business

LOS ANGELES—It's a sure sign of returning normalcy when Southern California boosters (a) start worrying about declining tourist trade, and (b) send missionaries throughout the world to spread the gospel of sunny California.

First symptoms developed when nearby vacation spots this winter began to suffer from a scarcity of business.

Resort operators in the San Bernardino Mountains started offering free use of ski and toboggan equipment to midweek guests. In the desert, dude ranches blossomed out with "package deals" covering activities ranging from use of new swimming pools to horseback excursions, accompanied by guitar-strumming Western guides who make flapjacks over campfires.

Estimated Off One-Third

At high-priced Palm Springs hotels and motels, complimentary continental breakfasts were thrown in to appease cost-conscious guests.

Local hotel men have a right to worry, with their business off 35.7% in January, the revenues of restaurants dipping 22.5% and consumption of alcoholic drinks down 31%.

Translating these figures into dollars, they estimate that the cost to the Southland's tourist industry this year may range anywhere from $100,000,000 to $180,000,000—a drop of one-third in revenues from this important source of income and employment.

Put up against a national drop of only 4.2%, such a showing looks bad indeed. Especially so when unemployment is growing and immigration—i.e. arrival of people who come in search of jobs, instead of places to spend their money — holds up disappointingly well.

Looking under the bed for the cause of general alarm, the tycoons of tourism find two major culprits: (1) this winter's mild weather, which failed for once to drive the home folks Westward to a sunnier climate; and (2) that Grade A villain, smog, which not only tends to keep tourists away, but worse yet, may encourage them to form the habit of going Floridawards, an unthinkable calamity.

Smog Partly Blamed

The Hotel Association reports that the average guest formerly stayed about 4.6 days, but that in 1949 this sojourn dropped to 2.9 days. They blame smog for most of this drop. Fred F. Harris, outgoing Association president, adds that the 15% Federal transportation tax on domestic travel, as well as competition from foreign countries also are major factors.

"The devalued European currencies," he said, "makes it less expensive for people from the eastern centers of population to travel out of the United States."

"In fact, devaluation moved to break-even point on a trip to California, as compared with an equivalent trip to Europe, from 100 miles east of New York to a line running north and south of Marion, Ohio. In other words, people in the East now can go to Europe cheaper than they can come to California."

Officials of the All-Year Club, that amazing group which for decades has plugged away at luring tourists here, and at faithfully seeing that they have a good time when they arrive, realize what's up.

They know that the average tourist family comes a good 2500 miles, that the trip represents a major investment for its members, and that once here, they don't feel they can repeat the delightful extravagance for about 7 years. And the All-Year Club people hold that despite the great industrial growth of this area, it still is in the colonial stage, dependent on the rest of the country for sources of business sufficient to employ the war-swollen population.

Lately the wise-cracking humorists of the radio networks have done much to make the horrid word "smog" a hilarious synonym for California climate in households throughout the nation. Undoubtedly the letters written back home by transplanted natives to their relatives in Iowa are taking much gilt off the picture of an earthly paradise that has been built up in American minds over a generation.

Trade Campaign Starts

The Los Angeles Chamber of Commerce, however, has lost none of its old-time bounce. Luring outside industries and buying power to Los Angeles is an old game.

So while the Local Air Pollution Control District's sleuths push their campaign to muzzle smudging smokestacks, the Chamber has launched a two - billion - dollar trade promotion campaign known as "Operation Order Book." That multi-zeroed figure is the number of outside dollars that it is hoped will roll into the tills of local manufacturers when their wares are made known to prospective buyers in other lands.

First target is the Caribbean area. A trade commission already is burning a path through the trade marts of Cuba, Puerto Rico, Venezuela, Panama, Costa Rica, Nicaragua, Salvador and Guatemala, armed with a suitcase full of information about goods turned out in some 10,000 Southland

factories, a load of directories to Los Angeles County's producers of some 3,000 manufactured products, and enough enthusiasm to spark the entrepreneurs of mañana-land into dotted line activity.

One commissioner already is traveling through Mexico, Central and South America, distributing a Spanish-language edition of a directory of L. A. County importers, against the expected easing in 1950 of Mexico's dollar shortage. He simultaneously will help local firms make contacts for agencies and distributorships in the nine Latin-American countries.

Hopping planes for other destinations will be other trade commissioners, some of whom will try to tap two embryo states for a larger share of the $600,000,000 annually spent by Alaska and Hawaii in continental U. S. Still other business ambassadors will tour eleven Western states, calling on buyers for retail and wholesale outlets which purchase about $950,000,000 worth of goods a year.

ECA Business Sought

Continued effort meanwhile is being made to get ECA business for local firms and a direct-mail sales campaign is being undertaken with thousands of firms in 18 countries.

"It is about 11 years since this Chamber sent trade emissaries overseas," declared Chamber President A. J. Gock.

"It's time to start selling again. Rest assured that we'll get a lot of new business for Los Angeles."

A hundred miles to the south, another burst of activity has erupted in an effort to bolster up the economy of San Diego, first California city to be declared a "critical unemployment area" by the U. S. Department of Labor.

As in Los Angeles, the situation is a paradoxical composite of prosperity and sound growth, mixed with sharp declines in employment. Last year's fish catch—most of it tuna—was the greatest in value of any commercial fishing port. Electric power sales were up 7½% in 1949 over the preceding year, and net Navy payrolls were up about 1%, thanks to growth in the number of civilian employees.

Help for San Diego

But recent cutbacks in aircraft employment and in tuna fishing, where market prices were off substantially, have changed the picture. Unemployment is reported at 25,000, and the U. S. Department of Commerce and Congressman Clinton D. McKinnon are trying to get Washington cooperation in shunting business here.

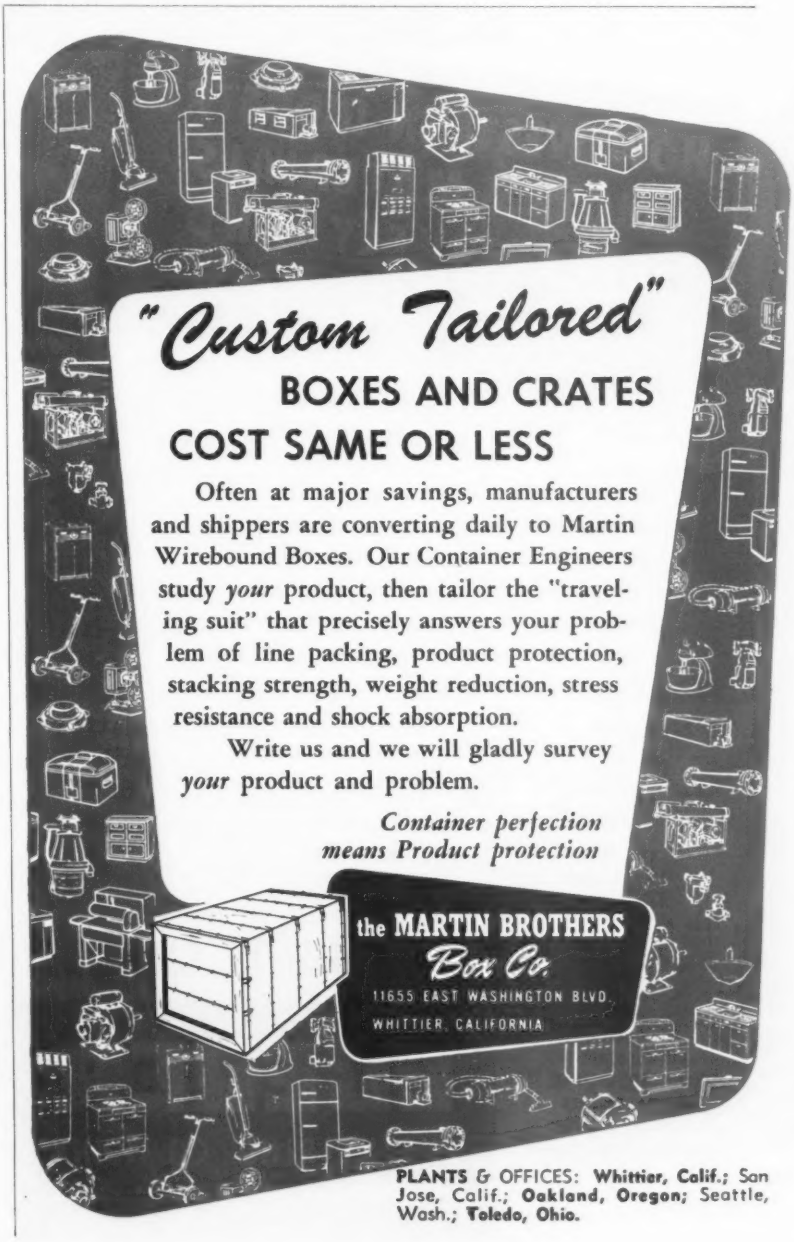
The Congressman hopes to persuade the air procurement office to channel more aircraft production into San Diego, the Navy to order more planes and ships repaired, and ECA to route foreign aid shipments out of this port, on the basis that each ship loading in the harbor is estimated to leave about $5,000 in payroll and other purchases behind.

As McKinnon puts it, "Navy's payroll, aircraft procurement, sales of canned tuna and other manufactured products, income from agriculture, and the tourist business have supplied San Diego County with most of its income. Four of these five major sources of income have dropped off, while the population has kept up and even possibly increased. This is the cause of our unemployment."

The City of San Diego has just signed a long-term lease for development of Mission Bay into a huge "play factory" which it hopes will be "the nation's outstanding aquatic playground." A large number of tourist cottages will be the first step in the $20,000,000 undertaking.

Investors are being sought to carry the development further on a commercial basis. Other civic leaders are urging construction of a municipal auditorium so big conventions can be brought to the area.

Continued on page 56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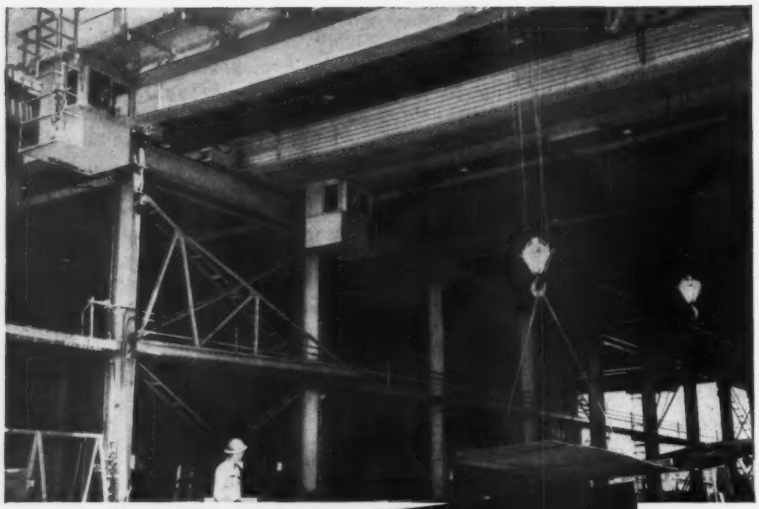

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LOS ANGELES REVIEW

Continued from page 55

While all this is going on, San Diego's construction industries surprisingly are going full blast, with January's building permits running about double last January's rate. Although homes already built have been finding a rather dull market, an upturn in building costs may have stimulated speculators to action.

In the Los Angeles area, residential building likewise has taken a new spurt. Nearby, on the edge of what has been looking like an economically devastated area, plans have been announced for one of the largest subdivision and home-building projects ever undertaken.

Big Building Project

Just when the Long Beach-Los Angeles Harbor area was reeling under the multiple impact of Navy cutbacks, shutdown of the Terminal Island dry docks, closing of the huge Navy hospital, threatened eviction of the Army Air base from Long Beach Municipal Airport—and perhaps also the industries located in the adjacent former Douglas plant, in order to make way for drilling of oil wells—comes a big deal which is to mean building of 15,000 homes on an 8,000-acre tract east of Long Beach.

In the San Fernando Valley, a 5,500-home building project has been announced. And a new industrial tract is getting started near the Los Angeles International Airport, with one manufacturer already completing his first building and a number of other plants reported lined up for future construction.

In all, the program is scheduled to top $15,000,000 and to involve about 100 factory buildings over the next four years. First arrival is the $200,000 Koolvent Metal Awning Company, which will turn out aluminum awnings containing vents and louvers for screening off the direct sun while permitting heat to be dissipated.

Other Expansions

Other recent expansions in Los Angeles include enlargement of Pacific Rivet and Machine Company's plant with new equipment, mainly extrusion headers, boosting output at the West's sole producer of tubular rivets.

A large eastern manufacturer is scheduled to take over the closed plant at El Monte formerly occupied by the Thor Corporation. Arrowhead Rubber's new $750,000 Downey plant is opening with getting into operation with a full staff expected eventually to number about 800 persons.

Southern California Business Show April 25

Fifteen new exhibitors (making a total of 50 at this time) have now entered the annual Southern California Business Show to be held at the Los Angeles Biltmore Hotel on April 25.

Otis Johnson, vice president of the Los Angeles chapter of National Association of Cost Accountants is chairman of this show.

Many new devices and improved models of standard units for office equipment will make their national debut at that time.

Institute On Materials Handling

Many Western firms can profit through the Institute of Materials Handling, to be held in San Francisco from April 12 to May 17.

Sessions will be held from 3 to 5 p.m. on six consecutive Wednesdays, mostly at Golden Gate College School of Management, 537 Market St. One session will be held at U. S. Naval School of Cargo Handling, Oakland.

Institute sponsors are: Materials Handling Committee, ASME; Materials Handling Task Committee, National Emergency Association; Industrial Packaging and Materials Handling Engineers; Materials Handling Association of Northern California.

Discussion periods will center around ideas and methods to reduce the time and expense of handling materials.

Course Designed for Tool and Die Design Engineers

A new school to train tool and die design engineers is now open in Los Angeles. The California Institute of Tool Engineering is offering for the first time in that city the time tested and successful curriculum of the Acme School of Die Design Engineering, founded in 1935 by Stanley R. Cope and Eugene J. Hill of South Bend, Indiana.

The California Institute of Tool Engineering offers the course in Tool or Die Design in 160 lessons each. Each course is planned so that it may be completed in twelve months full time (five hours per day) or twenty-four months, part time (two days per week, 3¼ hours each day).

Upon completion of the course the student possesses a complete set of lessons in four handy reference volumes which he can use in his work.

Up-to-the-minute training will be given in new methods and techniques of mass production, which will benefit the old timers in the business as well as beginning students.

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Forest Industries Constitute Permanent Backbone

Renewable trees constitute the base, though products may change; state of Washington takes national lead in production of pulpwood

SEATTLE—Countless centuries ago Nature seeded this far Northwest corner of the continent to timber and thereby constructed the industrial backbone around which the white man, when he came to people this region just about one century ago, was to build his economy.

Certain current anniversaries of importance serve to emphasize by example that the forest industries of the Pacific Northwest constitute a permanent economic framework. The detailed pattern has changed, and is still undergoing change, but the base on which they rest is still the same—trees, renewable trees.

Example No. 1 is labeled Pope & Talbot, Inc. Just 100 years ago, in the boom of the California gold rush, a merchant and mariner combination developed which is still very much in business and with obviously no plans for going out of business. Pope & Talbot, Inc., is today the oldest lumber company on the Pacific Coast.

Pope & Talbot, Inc., are still falling timber, hauling in logs and sawing lumber. With the years they spread out to other locations than Port Blakely and increased their cut.

Some of their mills, including Port Blakely, have by now been dismantled but the century-old mill at Port Gamble still echoes to the whine of saws, and now down in Western Oregon at Oakridge a new plant pours forth its boards and timbers.

A half century later came Frederick

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Weyerhaeuser, undoubtedly best known name of all in lumber. He had already made a big mark in Wisconsin and Minnesota when he began buying big tracts of Washington and Oregon timberlands and then in 1900 organized the Weyerhaeuser Timber Co.

At first only a timber holding company, Weyerhaeuser broadened its activities over the years to logging, lumber manufacture, pulp manufacture, plywood manufacture, and to minor products recovered from bark, sawdust and shavings. Its standards of utilization have moved progressively upward and today it aims to convert to salable products the entire harvest from the forest. Some observers remark, jokingly, Weyerhaeuser is trying to sell the whine of the saws to the movies or TV for sound effects.

Weyerhaeuser Timber Co. stands as a solid rock of permanence in the forest industries. Its great holdings of timber-lands are being brought under sustained yield operation with the guidance of scores of professionally trained foresters. It maintains its own well equipped laboratory to develop new products and refine old ones, all based on wood from the renewable forests.

Meantime, particularly within the past quarter century, the complexion of the Pacific Northwest forest industries has undergone great change.

Lumber, while still very important, no longer holds the field alone. The wood pulp industry has expanded greatly and today the state of Washington leads the nation in pulpwood production. The plywood industry has grown phenomenally, particularly within the past 10 years. Logging practices have changed extensively, with more and more emphasis on cleaning up the woods and leaving them in good shape to grow a new forest.

Of all the signs of forestry industry permanence, perhaps the most significant is the astounding rate of increase in the employment of professional foresters.

Only a few years ago about the only place a trained forester could get a job was with the U. S. Forest Service. Today, in the Pacific Northwest, more and more of the top logging engineers are college trained foresters and private industry in these parts is believed to now employ more foresters than the public agencies.

Many a log going to the mills in the Pacific Northwest today is out from the very same acres which Pope & Talbot, Inc., and their contemporaries logged with bellowing ox teams as long as a century ago. And that's

Continued on page 60

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SNAP-ON TOOLS CORPORATION
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Continued from page 59

where the permanent, ever-renewing supply of wood is coming from—the restocked cut-over lands. The idea that timber is a crop is taking hold, and the proof is found abundantly in everyday practice.

Now the Pacific Northwest's forest industries are consciously shaping the social pattern as well as the economic. Weyerhaeuser's earlier announcement of a pension and welfare program for its thousands of workers, which, in essence would provide minimum pensions of $100 per month upon retirement, wholly financed by the company, has been given the blessing of trial acceptance by AF of L Lumber and Sawmill Workers, with which union the company has contracts covering some of its 9,000 employees.

Lumber, plywood, pulp and furniture are all looking to a bright 1950 as spring nears. Production is high, orders are plentiful, prices are firm. The one discordant note is a complaint by the lumbermen that the 10% devaluation of Canadian currency has enabled low cost British Columbia producers to make further inroads upon the American market. British Columbia water shipments of lumber to the American Atlantic Coast in 1949 were more than three times the volume of 1948 business.

Somewhat more galling to the American lumbermen is the fact that Marshall plan dollars to Europe, dug out of American taxpayers' pockets, are flowing back to Canada for British Columbia lumber—instead of Oregon and Washington lumber.

The Pacific Northwest's developed waterpower resources are continuing to climb. Bonneville Power Administration moved into second place among power producers of the nation in 1949 and set new records in power output, according to BPA's 12th annual report. Tops is the TVA system. Another figure brought out in the BPA report is that for the year ending June 30, 1949, publicly owned systems serving the Pacific Northwest produced 65.4% of the total output.

Still, power supply lags behind demand. Huge new projects at McNary Dam, Chief Joseph Dam and Hungry Horse dam are in various stages of progress, some smaller projects are also in the making, and additional generating units are still being installed in huge Coulee Dam, yet BPA reports that, even under the most favorable circumstances, power requirements of the region will not be fully

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met until 1957. But, some ask, will things catch up even then with the way Seattle, Portland, Tacoma, Eugene, Spokane and other population centers of Oregon and Washington are growing?

Meanwhile, there are foreshadowings of increase in electric rates, despite the oncoming parade of kilowatts.

Higher Power Rates?

A Reclamation Bureau official recently told a Senate committee on the Interior that a 15% increase in power rates may be necessary because of sharply rising costs on dams now going up and projected. The existing rate of $17.50 per kilowatt year, it was pointed out in this testimony, would probably have to be increased to $21.57 per year if some 16 additional plants are to be constructed and their power added to the Bonneville pool.

At the same time, the pay-out period would have to be lengthened to 125 years as against 50 years presently contemplated.

BPA, however, promptly announced that present rates would continue at $17.50 for at least another five years because the rates are subject to review only every five years and they have just been reviewed.

Fishermen Buck Dams—

Construction of four dams on the Snake River, big tributary of the Columbia which drains the Idaho country, now in the hearing stage, is being opposed by commercial fishing interests. John C. Veatch, chairman of the Oregon State Fish Commission, has been quoted as saying: "If those four dams are built we can say goodbye to salmon runs on the Snake."

Commercial fishing, particularly salmon fishing, has great commercial importance in the Pacific Northwest. Since regeneration of the silvery-sided resource depends on stream migration and good spawning grounds, there is something of a perpetual running fight going on between the hydro-electric enthusiasts and the fishing interests.

U. S. Supreme Court has let stand a decision that the Washington state business and occupation tax may not be applied to goods delivered across state lines. An ace Seattle banker-economist stated that with price adjustments already effected in the region's basic commodities, he foresees no sharp decline in 1950. Washington state farm crops dropped 20% last year. Bremerton Navy Yard will get $40,000,000 reconversion job on the USS Kearsarge, an Essex-type carrier.

This Is How We Do It Over Here

G. T. Ticoulat, Manager of Sales for Crown Zellerbach Corporation and President of the San Francisco Sales Managers Association, joined a group of sales executives who sailed aboard the Queen Mary from New York March 4, going to England to teach British business men, at their request, how we sell our goods in this country.

A conference was scheduled in London for March 13 and 14, followed by conferences in Manchester, Liverpool, Sheffield, Edinburgh and Glasgow.

Oil Shipments Reach New High

Thirty-four tank ships took a total of 3,000,900 barrels of oil out of the Los Angeles-Long Beach harbor during the week of February 1, to establish perhaps an all-time record. This oil was destined for ports all over the world, according to Marine Exchange.

Oil exports have not come close to that figure since 1929, when they averaged about 2,400,000 barrels per week. Shipments of heavy fuel oil to the Atlantic coast accounted for a good part of this unusual activity, a result of the depressed price of California crude.

TWIN GUIDEPOSTS

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Population and Industry Outrun Available Water Supply

Secretary Chapman says future reclamation development will be far more costly and congressional appropriations much harder to obtain

DENVER—There's a ceiling to industrial development in the 11 Western states and that ceiling is the amount of water available. This flat statement by the new Secretary of the Interior, Oscar Chapman of Denver, highlighted a series of conferences and more festive occasions that marked "Oscar Chapman Day" in Denver last month.

Despite the big reclamation programs, population growth and industrial development have run ahead of available water supplies, Chapman said. Development of new water resources is lagging behind actual consumption needs, particularly in the generation of power.

Reclamation Progress

The reclamation job is about half done, the Secretary declared. Work in progress will complete programs bringing a total of 19 million acres of arid land under cultivation, and the Bureau of Reclamation sees a maximum of 38 millions that can feasibly be developed by irrigation.

The second half will be far more costly than the first half, Chapman frankly admitted, and it may take a long time to get from Congress as much in new appropriations as the 1,700 million dollars already expended or committed, during the past half century.

Reclamation Commissioner Michael Straus reported last month that six billion dollars worth of crops have been produced to date on federally irrigated lands. Annual crop revenues now exceed one-half billion dollars and direct returns to the government, mostly from sale of power, now amount to 44 millions a year and are rising year by year.

This year the Bureau is spending $80,603,100 on ten giant new dams in Wyoming, Colorado, New Mexico, Montana, Nebraska and Kansas. The individual dams range in cost from two to 27 million each.

By 1955 the Bureau's Missouri River basin development program will be calling for annual outlay of 221 million dollars, or nearly twice the amount budgeted for the 1951 fiscal year starting next July 1 of $105,337,739. Congress may pare this a bit, but not by very much.

Everybody is familiar with the great reclamation projects and knows the costly steps taken by the federal government to provide more irrigated land, flood control and water power. Less noticeable is the progress made in the development of mineral resources on the public domain since an unprecedented code known as the Mineral Leasing Act was adopted by Congress 30 years ago last February 25.

Various modifications have been made, particularly in 1941 when the government agreed to take royalties of a flat ⅛ or 12½ percent as its share of oil and gas discoveries on public lands.

Oil Boom

Since that time the great Rocky Mountain oil boom has begun to roll and the $25,000,000 spent last year in this area on geophysical work—a necessary preliminary to wildcat drilling—indicates plainly that the biggest part of the exploratory program is still ahead, so far as expenditures are concerned.

In 1949 Wyoming and three other states of the northern Rocky Mountain region (Colorado, Montana and Utah) produced oil that sold for $201,345,202.00. But what goes in, at this stage of the development programs, is greater than what comes out.

The total outlay for exploratory work and drilling was more than $148,774,000. Break this down and you see $89,000,000 for drilling including $45,000,000 for wildcats. The geophysical work used in determining where to drill wildcat wells took $25,000,000 and lease rentals and other carrying charges of $17,750,000 on prospective oil and gas lands for which the operators and speculators paid the private, state and federal owners a total of $41,000,000.

The tale goes on and on. Pipelines built or extended in the northern Rocky Mountain area in 1950 will cost approximately $50,000,000 and refineries have taken that much of an outlay during the past two years with several important refinery projects now just getting under way and calling for more millions to be spent.

Spending Know-How

Much of this expansion is due to the fact that operators now have rules to play the game by and know for sure just what kind of a deal they have made.

The Mineral Leasing Act, like the Taylor Grazing Act of similar vintage, provided a charter or code of conduct for the relations between the government administering the public lands (which amount to more than half the total area of some Western states) and the businessmen (oil men, ranchers, farmers, lumber companies, et al.) who want to do business on or under those lands.

These acts provided the so-called "favorable economic climate" for sensible and profitable exploitation and development of the public lands.

Across the border in Alberta the world's fastest economic development is taking place under a similar "favorable economic climate."

Over a mythical line in Saskatche-

wan the climate is uncertain and somewhat forbidding with the result that hundreds of millions of dollars are being spent to develop the province of Alberta, whereas almost nothing is being spent in Saskatchewan, although the latter province looks good geologically and has shown good promise for oil and gas discoveries. Business will make business if it finds or can help government develop sound rules of conduct—"rules to play the game by."

Real Deal

When the Denver city fathers committed the unspeakable crime of selling the city's only downtown park to a New York syndicate the people blinked and guessed it would be a good idea to have somebody erect a big building there. It provided an ideal site in the heart of the business district and constitutes the only full block unbroken by alleys. Something wonderful would have to come of it, surely.

The great Boettcher industrial and financial dynasty now has purchased from the New York group, Webb & Knapp, a half interest in Courthouse Square. This seems better, to Denverites. If anybody is going to have the gain from that strategically located block where the old Courthouse used to be, and which was a pleasant park for a dozen years or so, it ought to be Colorado millionaires and not just the New York variety.

The deal between the Boettcher interests and Webb & Knapp also includes some other downtown property, across the street from the Brown Palace Hotel on Broadway and favorably situated for a modern hotel.

Within another six months or so the plans will be released and Denverites will see what they exchanged for Courthouse Square. It is announced as an $8,000,000 structure to have stores on the lower floors with offices above. Even with Denver's most enterprising tycoons in on the deal, many Denverites are keeping their fingers crossed, hoping for the best.

Meanwhile, other businesses are migrating to snuggle close to the expected palace of trade. Downtown real estate values are rather upset temporarily, until a lot of the current developments take shape.

Wyoming Campaign

Howard F. Esmay, executive secretary of the Wyoming Commerce and Industry Commission, has launched a campaign to get Wyoming investors to invest their money in Wyoming. Of course it will continue to help outside capital find good investments in Wyoming. That is traditional.

"We Wyoming people," Esmay says, "have been a bit short-sighted. If Wyoming's resources are worthy of development it naturally follows that they will produce profits. If, as it is generally conceded, we have a good thing in Wyoming, let's reap the profits ourselves. Let's take a lesson from our neighbor, Montana, who has proven that her citizens have contributed more to the development of Montana than out-of-state capital and industrial leaders.

"Figures substantiate the statement that there is money—big money—in Wyoming. . . . So why eye the grass in the other pasture. Look at the 'green grass of Wyoming'!"

In this effort, commendable as it is, Esmay will have trouble. It has always been easier to finance a worthy enterprise in Colorado, Wyoming or other mountain states by going east, west or south.

Somehow the people of the area aren't inclined to risk their hard-won money in the same sort of enterprises that produced the money in the first place. Consequently, outside capital acquires a larger and larger share of the area's resources and true wealth. Good luck to you, Mr. Esmay! It is a brave effort and it can't do a bit of harm, even if it should fail.

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Utah's Economy Governor Finds It a Bruising Process

Sticks to his guns nevertheless; Nonferrous metal mining industry may go for guaranteed minimum wage tied to production efficiency

SALT LAKE CITY—By way of an interim report on Utah's experiment in trying to reverse the trend in state government expenditures, it can be said that Republican Governor J. Bracken Lee is sticking doggedly to his "economy" guns and that he is taking quite a bruising in the process.

A fiscal report covering the first six months of the new biennium under the Lee regime shows a savings for the period as compared to the corresponding six months of the previous biennium of approximately $1,600,000. The governor has sought to give this reduction some tangible meaning to the average man by promising to back corresponding tax reductions at the next session of the legislature in 1951. Specifically, he has promised to seek increases in income tax exemptions for dependents, allowances for extraordinary medical expenses and to eliminate the age restriction on dependents.

Budget Trimming Hard

Whether a promised tax cut can appeal as strongly to self-interest as do expenditures benefitting groups is a question that can not be definitely answered until the next gubernatorial election, and possibly not then.

Political opposition to the governor apparently believes that the spending cuts are unpopular with the majority of voters, as they are centering their fire on this phase of the governor's administration. And Gov. Lee has discovered that budget trimming evokes much more audible criticism than praise.

If there are any substantial number of groups or individuals who approve of specific expenditure cuts (as contrasted with the general idea of economy) they have been applauding the governor very softly and in privacy.

Sore spot of this area's economy continues to be the non-ferrous metal mining industry. The major mining operations of the state, outside the Bingham district, were still closed or operating with skeleton forces at the beginning of March although there were some hopes of reopenings in the near future.

Wage Proposals

One of the hopes rested upon a wage proposal made to the Park City miners by the operators. The plan is both new and complicated and staff representatives of the United Steelworkers of America have been studying it for some time.

Briefly, the proposal calls for a guaranteed minimum wage for the miners of $240 per month. This would be supplemented by a bonus arrangement tied to three main factors—metal prices, production efficiency and quality of ore mined.

Heretofore the unions have shied away from this type of wage contract. But they now have good reason to believe that it is a choice of no job or a wage which the operators feel would justify them in keeping their operations going. This might make the miners receptive to some changes which they do not like.

Echo Dam Squabble

Utah reclamationists are deeply disturbed over a squabble about the Echo Park dam on the Colorado—one of the ten proposed projects comprising the upper Colorado river basin storage plan. This particular dam would create a reservoir partly within the confines of the Dinosaur National monument. The national park service has taken a position against permitting a reclamation project to intrude on its preserves. The inter-agency dispute has been kicked up to the Secretary of Interior for a decision.

Utah is particularly concerned about Echo Park because it is the key structure of the proposed Central Utah project. It would provide exchange water for the Uintah basin, thereby permitting diversion of the water now used by that area to the Wasatch front.

Some go so far as to say that without Echo Park the state will never be able to utilize a substantial part of the water which has been allocated to it by the upper basin compact.

Alternative plans to provide Uintah basin with exchange water have been advanced, but the area looks upon them with disfavor because they feel that only Echo Park will give them a permanent guarantee of high quality to water. The exchange could perhaps be enforced without consent of the Uintah basin owners but such a procedure would so divide the state that its effectiveness in promoting any of the projects would be badly weakened.

Who's Behind It?

To water-minded Utahns it is hard to believe that park service people would seriously oppose the dam because the waters would intrude upon the national monument. It would not touch the dinosaur quarries and experts have declared that nothing of scientific value would be destroyed. The water would cover an expanse of presently inaccessible canyons and gorges and make them accessible by water.

In fact it is so hard for the reclamationists to believe that the park service position is tenable that they suspect there are other unrevealed pressures at work to kill off the Echo Park dam.

Aside from water utilization, there is a potentially important industrial factor involved in the dispute. The area in vicinity of the dam is rich in mineral resources of various kinds, the development of which is dependent upon a large supply of electric power. The dam would provide the necessary power.

To cite one example, the Monsanto Chemical Co. has just purchased more than 3,000 acres of phosphate deposits in the vicinity of Vernal. But a spokesman announced that development would depend upon construction of Echo Park.

Incidentally Dinosaur National monument was enlarged by many thousands of acres while the state was occupied opposing another large proposed public land withdrawal for monument purposes. And the expansion received hardly any public attention at the time the executive order was issued.

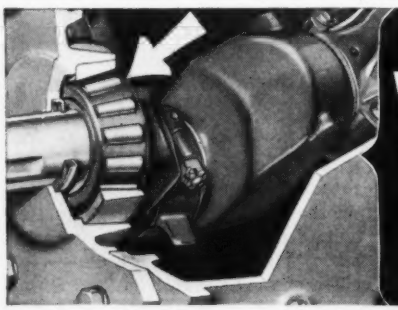
New Corporation Is Inventor's Delight

AN "angel" has appeared in the San Francisco Bay area to cast the shining light of effective assistance on local inventors who have patented articles.

This assist appears in the form of the Inventors' Business Consultants, Inc., a corporation formed by eight businessmen as an avocational project. This group will review an invention, study it with an eye to determining its marketability and practical use, then estimate the cost of production, locate possible firms to manufacture it, and act as legal counsel.

This service will cost the inventors nothing unless the inventions are actually sold, in which case the firm will take 20% on all contracts made. In all cases, the inventor has the final right to accept or reject any offers.

Inventors' Business Consultants, Inc., is composed of: William H. Reese, of Berkeley, founder and president of the organization. He is an industrial salesman and holds a Civil Engineering degree. E. Arthur Fowler, public accountant, is vice-president and treasurer. Herman Cook, a partner in an Oakland law firm, is secretary. Wilbur Barnes, Cutter Laboratories' chief chemical engineer; Philip Robertson, a mechanical engineer; Paul Warrington, an electronics engineer; Dr. Leonard Doyle, an economist and consultant to Henry J. Kaiser enterprises; Henry Gifford Hardy, a patent attorney, and Llew Jones, an executive with Foote, Cone & Belding, complete the personnel. Address is 2131 University Ave., Berkeley.



Why WISCONSIN HEAVY-DUTY Air-Cooled ENGINES Run on Timken Tapered Roller Bearings

Ever since the first Wisconsin Air-Cooled Engine was built over 20 years ago, the crankshaft of every one of these fine engines has been supported by Tapered Roller Bearings at BOTH ENDS. Here's why:

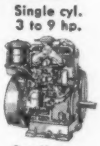
1. Tapered Roller Bearings take up all *End Thrusts* and *Radial Loads* (impossible with other types of bearings). You can mount your drive directly on the extended crankshaft of any Wisconsin Engine without the need for an extra thrust bearing or outboard bearing.

2. Tapered Roller Bearings *resist wear* to a greater extent than other types of bearings not only because of the file-hard surfaces of Timken Tapered Bearings but also because these bearings are inherently SELF-CLEANING. Oil enters at the smaller end of tapered roller bearings and centrifugal force carries it out through the large end, thus preventing accumulations of dirt and sludge that is often present in the oil. (Tapered bearings cannot develop shaft-cutting abrasive surfaces.

3. Tapered Roller Bearings permit flexing of the crankshaft to a much greater degree than the longer, rigid plain bearings which cannot stand up under flexing conditions, resulting in wearing "bell-mouthed" or failing completely. We have yet to hear of a single case of Wisconsin Engine bearing failure.

The use of dependable Tapered Roller Bearings in ALL Wisconsin Engines from the smallest to the largest . . . 3 to 30 hp., single cylinder, 2-cylinder and 4-cylinder . . . is typical of the engineering diligence devoted to providing the user with "Most H.P. Hours of on-the-job service".

Single cyl. 3 to 9 hp.



2-cylinder 7 to13 hp.

V-type 4-cyl. 15-to 30 hp.

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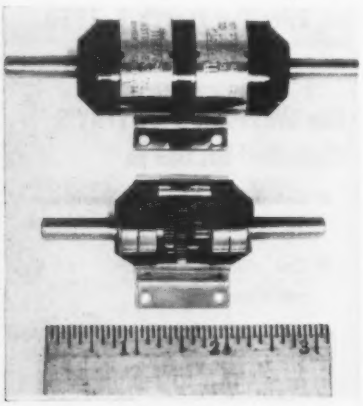
E-4507

Precision Miniature Gears

Precision hobbed gears of 96 pitch are now available in the line of speed changers by *Metron Instrument Co., Denver, Colo.* These hardened gears



are available in single or multiple sections and with more than 500 different ratios. Ideal for instruments, controls, computers, recorders, regulators, etc., where low-powered gearing is required.

Gear reductions as high as 750,000 to 1 are available, by adding more gearing sections together. Input speeds as high as 50,000 rpm, and output torques up to 2 pound-inches are permissible. Weights of 4 and 5 section units are about 6 or 7 ounces. Body diameter is 1.050". Addition of a sixth gearing section with a maximum ratio of over 11,000,000 to 1 is structurally practical.

E-4508

Light Duty Bearing Flange

The "Flangette," by *Fafnir Bearing Co., New Britain, Conn.*, is designed primarily for light duty, slow speed anti-friction bearing applications. It is a simple arrangement of two pressed steel stampings to form an inexpensive housing enclosing a self-aligning Wide Inner Ring type ball bearing. It is available for shafts of 18 sizes ranging from $\frac{1}{2}$" to $2\frac{3}{16}$".

E-4509

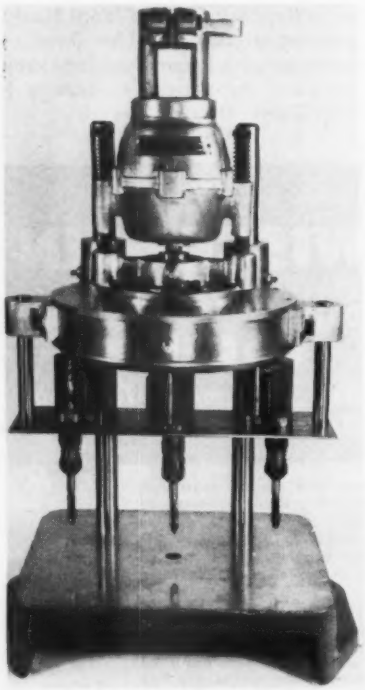
*Relief for Blistering Palms

Persons who have generated blisters on the palms of their tender hands from working with screwdrivers, push drills, carving tools, chisels, files, etc., can well appreciate this timely irritation-preventer. "Roto-Grip" it is called, marketed by *Indian Trails Industries, Oshkosh, Wis.* It is a resilient rubber sleeve designed with a revolving rubber cap. You slip it over the handle of the screwdriver or other tool and it (1) cushions your hand, (2) feels good to the touch, (3) turns independently on two brass washers, and (4) offers a better grip, even with gloves on your hand, because of raised ribs. Better control and faster workmanship. Retails for 50¢ or 3 for $1.

E-45010

*Adjustable Multi-Spindle Drilling Head

This adjustable multiple spindle drilling ad tapping head, produced by *Ettco Tool Co., Brooklyn, N. Y.*, fits on any type drill press. It comes with 2, 3, 4, or 5 spindles, and always main-

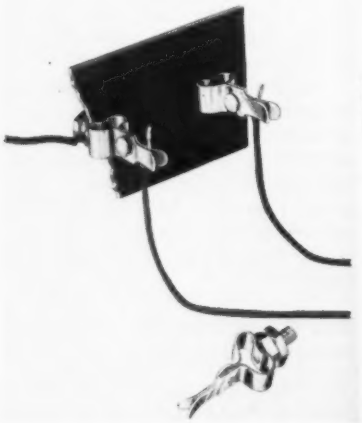


tains inbuilt accuracy and lineup. With it you can drill or tap parts with hole sizes up to and including $\frac{5}{16}$" in steel, and locate those holes within wide range. Rapid and accurate spindle adjustments can be made from a minimum center distance of $1\frac{1}{16}$" to a max. of $7\frac{5}{8}$". Spindle can be located at any point within a $3\frac{5}{16}$" dia. circle.

E-45011

*Test Clip

This is a simple means of speeding up the testing of assembly line products and experimental apparatus. And



it's convenient. *Grayhill Co., Chicago,* come up with this nifty little spring clip that can be permanently mounted and requires no effort other than slipping wire ends into the jaws. Tension is adjustable.

E-45012

*Improvement on Sweeping

This new floor magnet, just introduced by *Multifinish Mfg. Co., Detroit,* is better than a broom—it separates the ferrous metal from other stuff on the floor and picks up only steel chips from places not previously possible, without stooping. Only $2\frac{3}{4}$" clearance is needed. This tool is pro-

***Items evaluated by Western Industry's technical advisors on basis of information supplied by producer.**

pelled like a carpet sweeper, and a powerful permanent magnet rotates with the wheels, picking up chips over the 360° surface. Unloading is done by a Neoprene wiper ring that pushes the chips to a non-magnetic area at either end of the magnetic tube, where the entire load is easily released.

E-45013

*Kangaroo Truck

Melooz Mfg. Co., Detroit, has come up with a three-wheel hand truck that sits on its tail wheel. This light-weight tubular steel unit, weighing 27 lbs., will handle loads up to 600 pounds because of the added strength of the tripod support. The tripod telescopes, is adjustable instantly to any height.

And the tail wheel can be folded completely out of the way if necessary. Busy or congested stockrooms should go for this one.

E-45014

Long-Life Saw Teeth

Cutting lumber for 350 hours without resharpening is now possible with new carboloy-tipped blades by *Skilsaw, Inc., Chicago.* These blades are presently available in 7 inch dia. with 18 teeth and 8 inch dia. with 20 teeth. All 26 Skilsaw factory branch service stations will handle blades for resharpening.

E-45015

New Twist on Masonry Drills

The unique idea of applying high tensile wire to form a "live-spiral" flute on the shank of a carbide masonry drill promises to simplify and reduce time and cost in the drilling of holes in masonry, brick, tile, concrete and similar materials, according to the *Carboloy Co., Inc., Detroit.* The drill cuts faster because dust does not accumulate at the bottom of the hole to stall it. No need to withdraw the drill from the hole until the hole is completed. The "live-spiral" keeps the hole clean.

E-45016

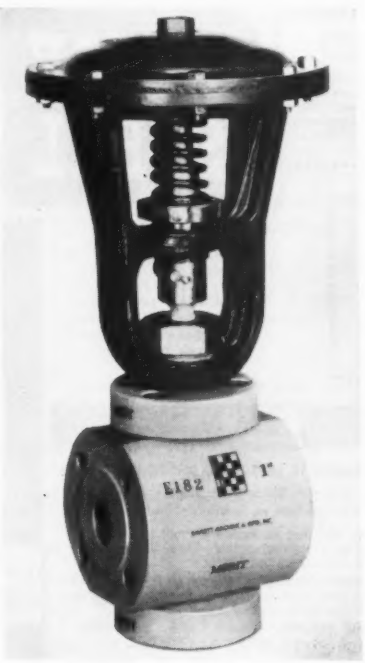
Fluid Tractor for Electric Hand Hoists

Calabar Corp., South Gate, Calif., has a fluid tractor for propelling electric hand hoists on monorails and cranes without jerking or swinging. Fits any track with flat or tapered tread ranging from 2" min. to 5½" max. Moves loads up to 5 tons forward or back at speeds from 50 to 250 ft. per min. Available with either ½ or ¾ h.p. 3-phase electric motor, 1750 r.p.m. Can be installed by any competent mechanic. Totally enclosed in dustproof housing. Equipped with antifriction bearings, operating in constant oil bath.

E-45017

*Porcelain Valve

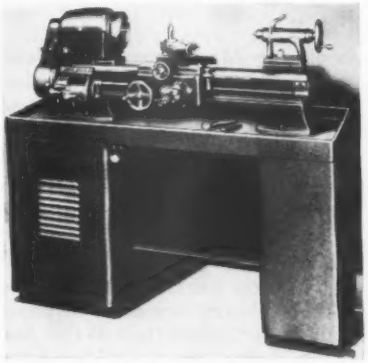
For applications involving highly corrosive conditions as well as extreme temperatures, the new "Merit" ceramic valve seems to be a natural answer. These units, manufactured by *Emmett Machine & Mfg. Co., Akron, Ohio,* incorporate a body made of a new material suitable for continuous 300 p.s.i. operation at temperatures up to 2,000° F, to control the flow of gases and chemicals other than hydrofluoric acid and hot alkali concentrate. Valve body has a hardness 9/10 that of a diamond, with a tensile strength of 27,000 p.s.i., compressive strength of 290,000 p.s.i., specific gravity of 3.63, and modulus of elasticity of 40,200,000. This ceramic will not absorb any moisture. Available in ½", ¾", 1", 1½", 2", and 3" sizes, and designed for attachment to 300-lb. standard ASA flanged fittings by means of stainless steel cap screws. Stainless steel studs can be mounted permanently in the valve body if desired. Both diaphragm and hand-operated types of valves (lubricated or unlubricated) are available.



E-45018

Big Little Lathe

Logan Engineering Co., Chicago, is now producing a bench size lathe with 1" collet capacity, 11" swing, 1⅜" spindle hole, and center distances of 24" or 36". Spindle is ball-bearing mounted. Bed ways have precision tolerance of .0005", and less than .0005" total run-out of the spindle at 12" from the front bearing. No. 955 is the 24" model, as shown on a pedestal, for $585. No. 957 is the 36" model, also on a pedestal, at $635.



E-45019

Pocket-Size Electric Power Hammer Improved

A shock absorber in the Hamer-Dril *(Hamer Dril Co., N. Y.)* is both a new idea and a distinct improvement. It makes this electric drill attachment very easy on that old and worn drill you may be using. Spring pressure has also been added under the ball tool retainer in the nose, replacing neoprene formerly used. The hex opening is now sealed against debris, and a means of on-the-job oiling has also been provided. End result is an inexpensive ($22.50) attachment for your electric drill by means of which your equipment becomes a pocket-size jackhammer. It weighs less than 3 lbs., has toolholders to fit all Rawl drills in ten sizes.

***Items evaluated by Western Industry's technical advisors on basis of information supplied by producer.**

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—Ben Franklin's Almanac, 1757

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—Acme Steel's Notebook, 1950

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How long since you sharpened your eye and your pencil on ways to save in shipping and materials handling?

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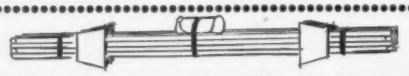
We show you here two specific examples of savings by our customers. If you want more evidence, we have hundreds of actual case studies to show you. In fact, more than 45,000 Acme customers are getting the benefits of Acme Methods now. Call the Acme Steel service office nearest you. (There are 45 of these offices in the principal cities of the U.S. and Canada.) Or send the coupon below for more details on your special problems.



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HELPFUL LITERATURE

for the plant operator who wants to keep informed

4501-L

HOURS OF OVERHEAD WORK IN MINUTES—*Stemm Bros., Inc. of Leavenworth, Washington,* have made available a 2-page illustrated paper on HiTender, a unit that mounts on any truck chassis of one ton size or larger, and is hydraulically operated, controlled by finger tip levers, and positions a "crow's nest" so that a man can be put in an unlimited number of positions from the ground to a 33-foot working height, with a swing of 180 degrees and horizontal radius of 20 feet.

4502-L

EXPLOSION HAZARDS IN OIL WELL REPRESSURING—Explosion hazards connected with the use of mixtures of natural gas and air in repressuring underground oil sands in secondary recovery of petroleum increase considerably as the pressure of the gases rises, according to results of tests described in Report of Investigations 4557 "Effect of High Pressures on the Flammability of Natural Gas-Air Nitrogen Mixtures" by *Bureau of Mines, Pittsburgh 13, Pa.* Methods for reducing the possibility of explosions with such mixtures are also included in the report.

4503-L

THE NEWEST THING IN STUCCO AND CONCRETE RESTORATION—is covered in a 16-page publication by *The Arco Company, Los Angeles, California,* showing pictures of structures of every type that have used Dum Dum Masonoc with uniformly good results, together with color chart. Dum Dum Masonoc is not a paint. It is a thick, elastic weatherproof coating which bridges and fills tiny cracks in stucco and concrete, providing a continuing film of protection over the surface. While the outer skin of Dum Dum Masonoc sets hard, the under-surface remains pliable and alive, expanding and contracting with movements of the building surface, thus tending to prevent the exposure of new cracks which might develop.

4504-L

INDUSTRIAL RECTIFIER DATA—Industrial applications of their "Seletron" Selenium Rectifiers in units up to 75 kw., are described in a new four-page folder by the *Seletron Rectifier Division of Radio Receptor Co., New York City.* Illustrated and described are typical installations used in theaters, electroplating and similar processes, elevator motor supplies, and power packs for DC motors.

4505-L

FLASH-WELDING METHODS—Considerable interest is being shown in the improved flash-welding methods revealed by *Reynolds Metals Company, Louisville, Ky.,* in its new release, "Technical Advisor," No. 12. Disclosures of improved percussion welding methods which now make it possible to flash weld aluminum tubing directly to copper, stainless steel, Monel, or other alloys without regard to the dissimilar metals in the joint are made in the publication. This is made possible by reducing the fusion zone in the weld to less than one-thousandth of an inch in width. Such a fusion zone is so small that practically no intermixing of elements occur.

READING GUIDE FOR WESTERN MANAGEMENT

A service for all management levels . . . current literature surveyed and appraised by the faculty of the School of Management, Golden Gate College

Business Writing

By Charles M. Carey, University of Notre Dame Press, 1949, $4.00.

Father Carey, who is Professor of English at the University of Notre Dame, has combined a treatise on business ethics with a practical and realistic discussion of the art of business writing. At first glance the book gives the impression of being just another textbook for college students on business English and letter writing. In fact, the first half is devoted to grammar review, spelling, and oral English. But when he gets into the subject of writing business letters we know at once that it is an entirely new approach to the subject. We suspect Father Carey is influenced strongly by his religious educational background and his position on the faculty of a Roman Catholic college, but cannot deny that we are impressed with the depth of feeling which he has applied to such a mundane subject as business writing. His best work is treated in the chapters on "The Human Element in Letters," "Letters of Inquiry," and "Collection Letters." There are many fresh examples to strengthen his discussions. On the other hand, chapters on "Advertising" and "Business Reports" are of little value except to pull aside the curtain to the inexperienced students in business.

Father Carey writes easily and in plain talk. His sincerity alone makes the book well worth reading. Those who enjoy reading the promotion letters from *Time* and *Life* will find an excellent collection.

Reviewed by:
ROY W. POE
Lecturer in Business Writing

The Statistical Agencies of the Federal Government

By Frederick C. Mills and Clarence D. Long, National Bureau of Economic Research, Inc., Number 50, New York, 1949, $2.00.

This excellent report on government statistical agencies was requested by the Hoover Commission on Organization of the Executive Branch of Government.

In 1948 there were 50 separate agencies, employing 10,385 persons, and spending $42 million—about 1% of all nonmilitary expenditures.

The role of statistics in a modern state is considered to be the provision of knowledge of the conditions which are basic to the formulation of government policy, and a necessity in modern business. Statistics on national income, production, wages, living costs, savings, housing, inventories, profits, for example, must be prompt, accurate and comprehensive.

A detailed example of the collection of construction data serves to portray the problems involved in the coordination of statistical data. Construction information is drawn from 11 sources by 9 collecting agencies. A double page chart is very effectively used to illustrate the flow of this information, and the final accumulation into a single dollar figure.

The volume is much more than a mere listing of agencies. The real contribution of this work lies in the thoughtful evaluation of the positive accomplishments, and the problems and deficiencies, of the 50 statistical agencies.

On the positive side, these agencies are commended for their comprehensive, accurate and detailed statistics, geared to policy formation, and reflecting social change on a national scale.

On the negative side, 18 specific problems and deficiencies are itemized, with suggested means of correction.

The book closes with 28 recommendations looking toward the improvement in coordination, the filling of gaps, the elimination of overlapping, and the improvement in planning and service.

Reviewed by:
DR. CHARLES J. MARSH
Lecturer in Business Statistics

Briefer Guides From The Management Library

Public Speaking Without Fear and Trembling

By Mark Hanna. Macmillan Company, New York, 1949, $2.75.

"A thousand-eyed monster with shark teeth and a perpetual sneer" . . . that is the inexperienced public speaker's impression of his audience. Yet, audiences always hope that the speaker and the speech will be good. The author explains what kind of words bore people, and what words have power and fire. He shows how to get a smash beginning, how to gather information and how to use that information to make a fascinating talk.

Advertising Handbook

Edited by Roger Barton. Prentice-Hall, Inc., New York, 1950, $7.50.

A comprehensive source book on all aspects of advertising, written by men who are outstanding in their respective fields of accomplishment. Among the authors are Harry Simmons, Otto Kleppner, James D. Woolf, Ben Dalgin, Hugh E. Agnew, Daniel Starch, and many others.

Handbook of Personnel Forms and Records

By Eileen Ahern. Research Report No. 16, American Management Association, New York, 1949.

This report consists principally of reproductions of forms currently in use in every major activity of personnel administration. The narrative sections emphasize the content of each type of form, bringing out the objectives of the particular activity and the principles governing its administration.

White Collar Unionization

National Industrial Conference Board, New York, Studies in Personnel Policy, No. 101, 1949.

It is believed that the next cycle of unionization will be among the country's six million white collar workers. This report shows, through case studies and company and union experiences, the strategy and tactics used to overcome the white collar worker's traditional resistance to unionization. A detailed analysis of 134 white collar agreements reveals what unions have obtained in their contracts. Also, the problems that follow in the wake of white collar unionization are discussed.

Public Speaking for Businessmen (3rd ed.)

By William G. Hoffman. McGraw-Hill Book Company, New York, 1949, $3.50.

In this book, every important aspect of effective speaking is covered in detail. It shows how to organize a speech; what and how to memorize; how to improve vocabulary, enunciation, and voice; and how to use gestures to best advantage. Several chapters are devoted to the conducting of meetings and the handling of conferences and round table discussions. Radio speaking is also covered.

Reviewed by:
BERNA M. CARLSON
College Librarian.

THE WEST ON ITS WAY

ARIZONA

FLUORESCENT FIXTURES PLANT opens in Phoenix. Grayco Products began production recently in the Aviola Building of many stock fluorescent and slimline fixtures for residential, commercial and industrial users. S. H. Levee, formerly of Chicago, is the owner.

A trend is identified toward the establishment of basic industries in Phoenix by plants such as the Union Gypsum Company, whose Phoenix plant is shown above. This processing plant has a calcining capacity of 150 tons per day. The Gypsum quarry is located near Winkleman. Area served is California, New Mexico and West Texas.

CALIFORNIA

$250,000 AIR BRAKE EXPANSION—A West Coast factory branch is under construction by Bendix-Westinghouse Automotive Air Brake Company, located at 2000 Fifth street, Berkeley. Completion is expected by May 1st and approximately 50 persons will be employed. The branch will cover the entire Pacific Coast from Canada to Mexico.

U. P. TO SPEND $4,875,000—An order has been placed with Electro-Motive Division of General Motors by Union Pacific Railroad for thirty-five units, ten of which will be passenger power units and twenty-five terminal switchers.

INGLEWOOD PLANT EXPANDS—Construction has been completed by Ira Gail Co., manufacturers of occasional tables, of a new 5,000 square foot plant at 640 South Isis street, Inglewood.

HELICOPTER NAME CHANGE—United Helicopters, Inc., Palo Alto, California, changes name and will operate as Hiller Helicopters.

JOYCE INSTALLS PILOT PLANT—Joyce, Inc., shoe manufacturers, install a pilot plant and laboratory at temporary headquarters in Pasadena, following recent destruction by fire of its plant.

NIAGARA DUPLICATOR REORGANIZATION—Niagara Duplicator Co., 725 Second street, San Francisco 7, has completed its reorganization plans and is ready to enter immediate expansion.

LOCKHEED IN MODERNIZATION PROGRAM—Lockheed Aircraft announces major factory modernization program costing approximately $2,000,000, involving installation of heavy presses and accessory equipment keyed to handle heavier gauge metal and much

GEARS

- Of every description
- Cut to your requirements
- Built to high standards
- Serving all industry

SPUR • HERRINGBONE
BEVEL • HELICAL
WORM • RACKS
SPROCKETS

GEAR CUTTING • GRINDING • MACHINE WORK

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AND MANUFACTURING CO.
"43 Years Service to Industry"
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PRE-ENGINEERED AND CARRIED IN STOCK
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• Nearly 50 years of package conveyer experience is built into the Mathews complete line of standardized conveyers which are available today. Sections of Portable Roller and Wheel Conveyers, Portable Belt Conveyers and pre-engineered General Purpose Belt Conveyers are available to promptly meet today's requirements for quality package handling equipment. When special handling problems arise, the same engineers who have developed this fine line are available to design the power and gravity conveyers or special conveying machinery necessary to solve them. For complete conveyer service, the Mathews Organization is at your immediate call. Engineering Offices or Merchandise Distributors are located in principal cities.

MC
MATHEWS CONVEYERS
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PACIFIC COAST DIVISION
Mathews Conveyer Company West Coast . San Carlos, California
CANADIAN DIVISION
Mathews Conveyer Company, Ltd. . . . Port Hope, Ontario

larger sheet sizes. Because of size of new equipment, machinery being installed first with 33,000 square foot building to be constructed over machines later.

NEW QUARTERS FOR GOODALL RUBBER CO.—Expanding to new and larger quarters, the Los Angeles office of Goodall Rubber Company moves to 2939 East Eleventh street, Los Angeles.

OAKLAND INDUSTRIAL SITE SOLD—Howard Supply Company buys industrial property in Oakland from the Santa Fe Railroad Company. A new modern steel warehouse has just been completed on the premises which will make room for the stocking of new lines recently added. The company now distributes approximately 50,000 items and are distributors for over 100 manufacturers of industrial and mill supplies.

$51,500,000 TO BE SPENT BY EDISON—Southern California Edison Co. allots $51,500,000 in 1950 for new plant and replacements, with completion scheduled by end of 1951.

GOODYEAR TIRE OUTPUT INCREASED—Goodyear Tire & Rubber Co. announces the Los Angeles plant starts immediately on a 24-hour-a-day, six-day work week, which plan will increase local tire production by 2,000 tires a day. Three thousand workers have been employed to staff the plant. A record of 2,000,000 tires will be turned out this year.

CASE GOODS FACTORY IN L. A.—A new Los Angeles case goods factory, Futures in Furniture, Inc., 1960 East 48th Street, headed by Louis Lippman, begins operations. The new plant will manufacture modern dining room and occasional furniture in the medium priced field for national distribution.

Advance Electric & Relay Company, manufacturers of relays for general circuit control, electronic, aircraft and marine applications, now occupies a new modern structure providing more than 20,000 square feet of floor space at 2435 North Naomi street, Burbank, shown above.

WARNER-HUDNUT, INC., to establish new Pacific Coast headquarters on Eastern Avenue, Los Angeles. The $500,000 structure will have an area of more than 50,000 square feet. The firm will manufacture and distribute cosmetics for more than 20 concerns belonging to the Warner-Hudnut group. Henry R. Harold, vice-president of Warner-Hudnut, Inc., will be in charge of new operation.

BATHING SUIT MANUFACTURER TO MOVE—Rose Marie Reid Company, 920 South Maple street, Los Angeles, begins construction on a new 38,000 square foot plant located on Century Boulevard and Anza Avenue. The firm will move to the new location when it is completed in a little over a year.

PAPER BAG CO. STARTS CONSTRUCTION—Los Angeles Paper Bag Company, 941 East Third street, Los Angeles, begins construction on a new plant at 4400 South Boyle Avenue, Vernon. Completion is expected by May 30, 1950, when the company will move to its new location. G. S. Brenzel is general manager.

NEW PLANT FOR CATHAY FOOD PRODUCTS CO.—Cathay Food Products Co., 2931 North Main street, Los Angeles, will soon begin work on their new plant to be located on Anza Avenue in the Los Angeles International Airport industrial tract. Cathay Food is producing a food chip with various flavors of chili, onion, shrimp, etc.

NEW FACTORY BUILDING—Harper's Stain & Lacquer Company, 6222 South Emil Avenue, Bell Gardens, will soon begin construction on a new factory building at 5730 Southern Avenue, South Gate, and will move to the new location upon completion. H. R. Skinner is in charge.

PACIFIC COAST ABALONE CO. starts operation at 238 Jefferson street, San Francisco, and will process (quick freeze) abalone. The company operates with its own boat and diving equipment.

NEW SITE FOR PUREX CORP. LTD.—Purex Corporation, Ltd. will establish their first plant in Northern California in San Leandro. The new installation will be on a two-acre site so as to provide possible later expansion.

EXPANSION PLANNED—The Pacific Portland Cement Company at Redwood City will expand its operation with the erection of four buildings. These will house a spray scrubber, a kiln, a wallboard plant and a precipitation building.

NEW PLANT AT MOSS LANDING—The Point Adams Packing Company of Astoria, Oregon, is expanding its California operations

"When things assume that run-down look, I call for help—inside this book."

"What kind of help? It lists 'em all... 'Most every service—big or small."

Need the windows washed, floors waxed, rugs cleaned, furniture touched up? Whatever you need, turn first to handy Classified for local service people and salesmen. And when you're ready to buy, find it fast in the Yellow Pages. Just as other buyers will find your products fast, too, when you advertise in Classified.

You'll find it fast in the

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The Pacific Telephone and Telegraph Company

You can do a better job with

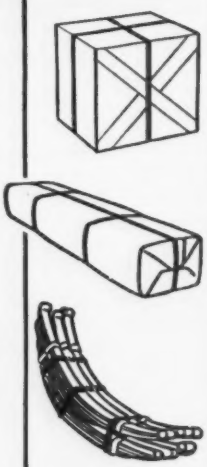
SIGNODE STEEL STRAPPING

Pictured here is a Signode representative demonstrating an A-2 Seal Feed strapping machine in the shipping department of a well known manufacturer.

Prior to the introduction of this modern tool...and the Signode System of Steel Strapping which it here exemplifies . . . this particular company looked on packaging as a road block in the way of profits.

Today, quite the contrary is true. Shipping room costs are down because packaging inefficiencies have been eliminated. Damage claims are rare because the chances of breakage and pilferage have been minimized. Customer good will is at an all-time high because products are delivered in the same fine condition as they left the factory.

Similar benefits can be yours—regardless of what or where you ship.



MAIL COUPON FOR DETAILS

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We ship ..... Send me details on Signode's 6-Point System of Shipping Protection.

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Company .....

Address .....

City ..... State .....

SIGNODE

458 Bryant St., San Francisco 7, Calif.; 440 Seaton St., Los Angeles 13, Calif.

THE WEST ON ITS WAY

with the projected erection of a plant at Moss Landing in Monterey County.

SACRAMENTO VALLEY MILLING CO. is expanding its operation with a new plant at Williams. This is reported as a seed cleaning and processing operation.

SUNLAND INDUSTRIES OF FRESNO EXPAND—An addition and modernizing job on their plant in Fresno at a cost of over $300,000 is completed by Sunland Industries. The new plant is for "ammoniating" super phosphate and is equipped with machinery with photo-electric control and will turn out ten tons of the new type fertilizer per hour.

INGLEWOOD COMPANY TO MANUFACTURE PHILLIPS BITS—Zephyr Manufacturing Company, Inglewood, is licensed to manufacture screwdrivers and screwdriver bits for Phillips recessed head screws. Specialized, high-production tooling has now been completed, and Zephyr will shortly have available a complete line of hand and power drivers for industrial and assembly application. A special department has been formed to design and produce drivers for application where commercially available tools have been inadequate.

PASTUSHIN CONTRACT AWARD—Vic Pastushin Industries, Inc., manufacturer of aircraft components, has been awarded an order of 5,154 jettisonable tanks for jet aircraft by the U. S. Air Force. These units are of a new design for use on Lockheed Aircraft's F-80 jet fighter.

PAPER COMPANIES MERGE—Specialty Papers Company of Dayton, Ohio, and Accepted Products Company, Inc., San Francisco, producers of waxed paper, merge, and plan to move into larger quarters at 1280 Indiana Street, San Francisco, in March.

VALVE COMPANY FORMED—L. S. Barksdale, president of Saval, Inc., announces formation of a new company to be known as Barksdale Valves, and located at 4905 Santa Fe, Los Angeles, to produce "Shear-Seal" valves for industrial applications. This new firm has separate facilities to produce non-airbourne valves under an exclusive license arrangement with Saval.

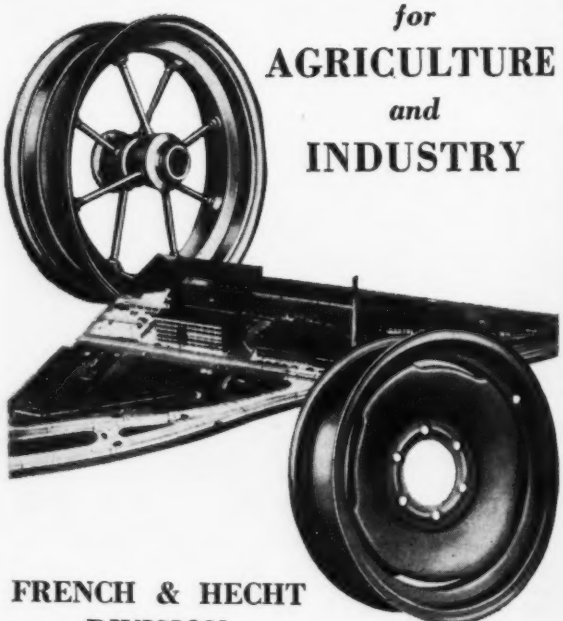
F & H WHEELS

for

AGRICULTURE

and

INDUSTRY



FRENCH & HECHT DIVISION

KELSEY-HAYES WHEEL COMPANY

DAVENPORT, IOWA

Wheel Builders Since 1888

THE WEST ON ITS WAY

CANNING-FREEZING CONSOLIDATION—Consolidation of all canning-freezing operations in plants at Santa Clara and Watsonville has been made by Baker Food Products Co. Henceforth, the company plant at Wall and Walker in Watsonville will handle all operations.

AIR FORCE MOVE NOT EXPECTED—Official announcement from Washington has been made indicating the air force does not plan to move the aircraft industry in Southern California to inland points despite persistent rumors to the contrary.

PG&E ADDS NEW UNIT AT KERN PLANT—The second generating unit at P. G. & E.'s Kern steam plant has been made. This new unit has a capacity of 134,000 horsepower.

NEW CHEMICAL ELEMENT PRODUCED BY UC—Production of another new chemical element hitherto unfound on earth has been made by one of the cyclotrons at the University of California. It will be known as No. 97 in the roster of chemical elements.

$1,000,000 IMPROVEMENTS IN S. F. HARBOR—The Board of State Harbor Commissioners announce plans for a million dollar improvement to the waterfront facilities of San Francisco Harbor. The new plans call for a quay type pier with a depressed center section of more than 150,000 square feet, providing tail-gate truck delivery and facilitating rail car operation and general cargo handling, to be erected between Piers 30 and 32. The new pier is expected to be in operation within a year.

PRODUCTION OF "5010 SERIES" AT EL SEGUNDO—Production is expected to start at El Segundo on a small car known as the "5010 Series" by mid-summer, it was announced by Nash-Kelvinator Corporation.

COLORADO

PRIVATE INTEREST IN OIL SHALE PLANT SOUGHT—Interest by some private concern in building a 43-million-dollar oil shale plant at Rifle, Colorado, is being sought by the federal government. The Bureau of Mines has completed plans for a plant which could turn out 10,000 barrels a day of gasoline-Diesel oil mixture. Neither private industry or congress has shown much interest in providing the capital to build it to date. Based on operations at the bureau's present experimental plant at Rifle, calculations show that such a plant could be built for between $4200 and $4300 per barrel-day of output capacity, although the average construction of an oil refinery is between $6000 and $6500 per barrel-day.

IDAHO

AEC CONTRACT NEGOTIATIONS UNDERWAY—Contract negotiations are being conducted by U. S. Atomic Energy Commission with the Fluor Corporation, Ltd. of Los Angeles, for construction work on the materials testing reactor to be built at the Reactor Testing Station near Arco, Idaho.

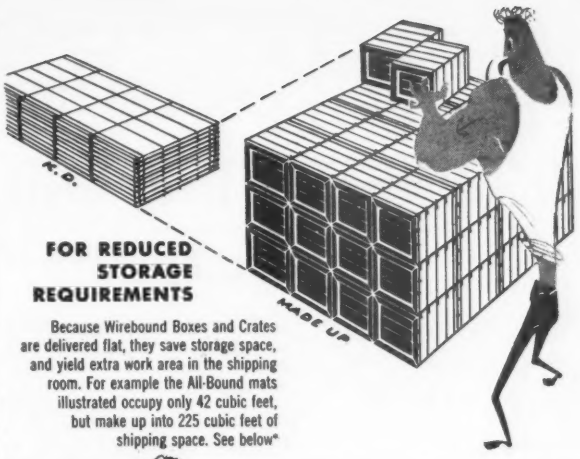
NEW MEXICO

NEW GAS POOL—State Oil Conservation Commission reports discovery of a new natural gas pool in New Mexico in the area of the San Juan Basin. 1,400,000 cubic feet of gas daily have been tapped by a wildcat well drilled 34 miles east of Farmington. The new strike indicates possible greater reserves in the basin than previously estimated.

$7,500,000 POTASH PLANT—Duval Texas Sulphur Co., newly named Duval Sulphur & Potash Co., plans to build a plant costing $7,500,000 at Carlsbad. It will take approximately two years to complete the plant.

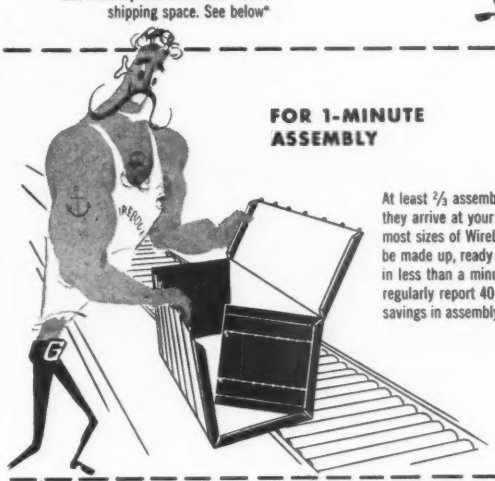
OREGON

MILLS MERGE—Forest Products Co., Oregon, Ltd., purchases Sierra Lumber, Inc. planing mill and other physical properties at Brownsville. The transaction combines the facilities of the two enterprises located on adjoining tracts. Sierra Lumber, Inc. continues to maintain its wholesale office at Brownsville, marketing Forest Products Co. items and those of other mills.



FOR REDUCED STORAGE REQUIREMENTS

Because Wirebound Boxes and Crates are delivered flat, they save storage space, and yield extra work area in the shipping room. For example the All-Bound mats illustrated occupy only 42 cubic feet, but make up into 225 cubic feet of shipping space. See below*



FOR 1-MINUTE ASSEMBLY

At least ⅔ assembled when they arrive at your plant, most sizes of Wirebounds can be made up, ready to pack in less than a minute. Users regularly report 40-50% savings in assembly time.*

FOR BETTER, SAFER STACKING

The versatility of the Wirebound principle—the strength of steel combined with thinner wood—permits variation of wire gauges, staple spacing, battens and cleats to provide safe structural strength for large and small containers to meet all warehousing requirements. Note*

USE **Wirebound BOXES & CRATES** FOR LOWER TOTAL SHIPPING COSTS

60 Wirebound Plants throughout the United States

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☐ Send Booklet of Product Information ☐ Send a Sales Engineer

NAME

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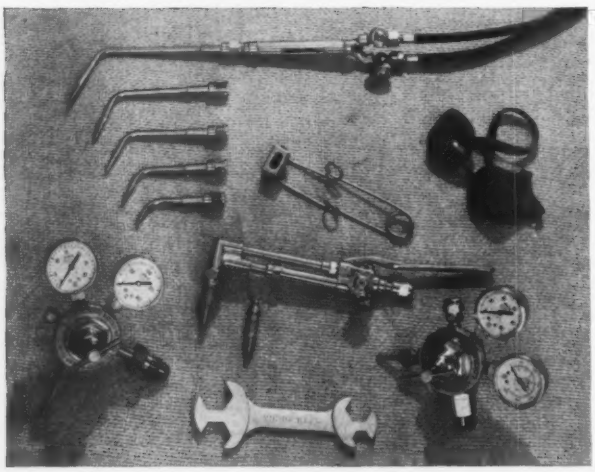
OUR PRODUCT IS

VICTOR MEDIUM DUTY WELDING & CUTTING UNIT

WC-89 $117.55



UNIT WC-89, as shown, includes

Model SR95 Regulator; Model SR96 Regulator; Model 100 Welding Torch Butt; 5 Type 13 Welding Torch Nozzles; 1 Four-way Wrench; Model C1450-100 Cutting Attachment; 2 Cutting Tips, Type 5-101, sizes 0 and 1; and 1 AU-2 Accessory Unit, made up of 1 spark lighter, 1 pr. goggles, 25 ft. 3/16" dual hose, coupled.

Here is the top-notch unit you've been waiting for! Designed especially for repair, maintenance and light manufacturing. Priced right . . . Try it!

Ask your VICTOR dealer to demonstrate the WC-89 Unit NOW.

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Many other VICTOR welding and cutting units are available . . . See them at your dealers, or write for Bulletins 307 and 312.

VICTOR

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Hard-facing alloys. Regulators for all gases up to 5,000 psi. Welding and cutting equipment for all needs. Blasting nozzles. Cylinder manifolds and trucks. Fluxes. Schramm Air Compressors. Nelson Stud Welding.

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THE WEST ON ITS WAY

PLYWOOD PLANT CONSTRUCTION—Completion by July 1st is expected on the new plywood plant in connection with the Bohemia Lumber Co. at Culp Creek, near Cottage Grove. The Company has been capitalized at $200,000 with incorporators listed as Bohemia Lumber Co., owned and operated by the Stewart brothers and Lawrence Chapman and the Buffelen Manufacturing Company of Tacoma.

INTERNATIONAL HARVESTER PURCHASES SITE—The International Harvester Co. purchases an additional 6.9 acre site adjoining its new distribution warehouse on McLoughlin Boulevard in Portland. This site will be used for construction of a centralized parts depot for all branches of the company.

ALUMINUM CO. CONTRACT AWARD—Contracts have been awarded for the construction of two new buildings and the expansion of the machine shop by Aluminum Company of America. This $300,000 expansion is a part of the additional facilities needed as a result of the completion of the new rod, wire and transmission cable plant.

WAX PLANT OPENS—Oregon Wood Chemical Company plant at Springfield begins commercial production of wax from Douglas fir bark. Two tons of wax a day is being produced and it is expected production would increase to about eight tons daily in six weeks.

MILL CENTER PLANNED—Surplus Properties Corporation, an affiliate of Dulien Steel Products, Inc., purchases 234 acres of land, buildings, shipways, cranes and other equipment for $448,430. This property is the former wartime site of Oregon Shipbuilding Corporation near Portland. It will be used for an industrial center for manufacturing and distribution purposes.

UTAH

CONTRACT AWARD FOR WESTERN MACHINERY CO.—A contract has been awarded to Western Machinery Company, Pocatello and Salt Lake City, to furnish three air compressors and other equipment to the U. S. Atomic Energy Commission's reactor testing station near Arco.

GAS SERVES WESTERN INDUSTRY BEST

Can advanced methods of Controlled Heat reduce costs in your plant? Your Gas Company's Industrial Engineering Consultant is equipped to help you find out. Telephone your gas company.

PACIFIC COAST GAS ASSOCIATION

THE WEST ON ITS WAY

OPTION TO PURCHASE—Monsanto Chemical Co. obtains an option to purchase part of the extensive phosphate deposits of the Humphreys Phosphate Co. of Denver, near Vernal, Utah.

WASHINGTON

RESEARCH LABORATORY—Howard S. Wright & Co., Inc., awarded a contract to construct a two-story research and technical control laboratory for Soundview Pulp Co. at Everett. It will include the remodeling of an existing structure and new construction.

PLYWOOD CO-OP FORMED—Plans for a cooperative plywood plant at Tacoma are underway by a group of organizers, to be known as Great Western Plymood Co. It will purchase the Rainier Plywood Co. plant at 624 E. 15th street for $300,000. No halt in production is anticipated by the transfer.

NEW COMPANY SELLS SHARES—Organization is underway to form a cooperative plywood plant at Lacey to be known as the Lacey Plywood Co. 120 working shares valued at $2500 each will be sold. The plant will be modern throughout and new equipment will be installed.

BLAST AND FIRE WRECK PAINT PLANT — West Coast Painters Co., E1120 Sprague, Spokane, was wrecked by a blast and gutted by resulting fire.

WYOMING

$19,000,000 GAS MERGER—A $19,000,000 expansion program to increase natural gas supplies for Colorado and southern Wyoming was proposed in the merger of the Canadian River Gas Company and the Colorado Interstate Gas Company. Approval of such a merger is pending in Washington. A 170-mile gas transmission pipe line from Lakin, Kansas is involved in the expansion, where it would connect to a pipeline from Texas.

METZGAR "LIVE-ROLLER" Power Unit

FOR HORIZONTAL POWER APPLICATION IN CONVEYOR AND PRODUCTION LINES

Metzgar "Live-Roller" Power Units offer a wear-resisting metal transmission surface that outlasts belt type units many times over for handling hot or sharp edged articles.

They are offered in various lengths and are readily adjustable for height.

Rollers may be specified for any spacing (1 to 5 Rollers per foot) either above or below the channel frame.

For economy in power units, your best buy is a Metzgar.

WIDTHS 11½" 15" 18" 24"
•
BALL-BEARING THROUGHOUT
•
MORE DURABLE THAN BELT TYPE
•
PERMANENT OR PORTABLE BASE

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A Great Variety of Standard Types

Save lost time, eliminate bottlenecks and wasted motions—increase production capacity by streamlining handling of material with the type of Nutting Trucks suited to your work. For quicker delivery a great variety of standard types are available—also rubber tired wheels and casters of all sizes for any truck.

FIG. 1136. Non-Tilting Bar Handle Truck, 6 platform sizes. Capacity 2500-3000 lbs. Semi-Steel or Rubber-Tired Wheels.

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Fig. 1136

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Secord Sales Company.....95 Connecticut St., Seattle 4, Wash.
H. H. McVeigh.....West 310 First Ave., Spokane 8, Wash.
Equipment Supply Co.....60 Richards St., Salt Lake City 1, Utah
McDonald-Hunt Scale & Supply Co.....1540 Waxee St., Denver 2, Colo.
Egan W. Jones.....5th Ave. at Jackson St., Phoenix, Ariz.
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(Trisodium Phosphate-Crystal)

Phosphates are a good contribution to any cleaning compound. Call Maas, the West's only manufacturer of phosphates, for your requirements.

Write us for information on the many uses of T.S.P. in industry.

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"ARMED FOR CHEMICAL SERVICE"

WESTERNERS AT WORK

California

FRANK E. BODINE named assistant Central Station manager for the Pacific Coast district, Westinghouse Electric Corporation, with headquarters in San Francisco.

W. E. HENDERSON resigns as treasurer of Hall-Scott Motor Car division of ACF-Brill, Berkeley, to accept position as vice-president and director and acting general manager of the division.

GEO. T. KELLY named Comptroller of Southern Counties Gas Company, succeeding WM. S. MCCOY, retired. Guy E. Steller named Treasurer, will also continue on as secretary, succeeding Kelly.

Kaiser Fontana plant announces the following promotions: ROBERT C. MADDEN to division superintendent of rolling mills; GLEN THOMPSON to superintendent of electrical maintenance; ERNEST F. DONATIO to division superintendent of plant service departments; BERNARD A. SHRIVE to assistant electrical maintenance superintendent; and WILLIAM DEPEW to metallurgical department superintendent.

Stanford Research Institute announces the formation of a Technical Advisory Committee composed of nine leading scientists and research administrators in its San Francisco and Los Angeles areas of activity. The members are: DR. MERRILL BENNETT, executive director of the Food Research Institute, Stanford University; DR. PHILIP A. LEIGHTON, head of the chemistry department, Stanford University; DR. A. IRVING LEVORSEN of the School of Mineral Sciences, Stanford University; DR. F. C. LINDVALL, chairman of the division of engineering, California Institute of Technology; GEORGE L. PARKHURST, vice-president of Standard Oil Company of California, president of the Oronite Chemical Company, and chairman of the board, California Research Corporation; DR. M. E. SPAGHT, president of Shell Development Company; DR. F. E. TERMAN, dean of the School of Engineering, Stanford University; DR. DOUGLAS M. WHITAKER, dean of graduate studies, Stanford University; and PAUL WILBUR, director of research, Food Machinery and Chemical Corporation.

STUART P. WALSH of Industrial Survey Associates, San Francisco, becomes director of research at University of Santa Clara on part-time basis, later to devote full time to the position.

HARRISON D. WELCH appointed Western division service manager for Caterpillar Tractor Co., succeeding DEAN UHLL, Western service manager since 1948, who has been named export service manager for the company.

W. A. COTTON named production manager of Masonite Corporation's hardboard factory at Ukiah. Cotton formerly was general superintendent of production and operations at the Laurel, Mississippi plant.

Eureka Plywood Company, Eureka, names WILLIAM E. QUAY manager. Quay was assistant plant manager of M and M Woodworking Company's plywood unit at Albany, Oregon, before joining the Eureka organization.

O. W. PEARSON resigns as president of Pacific Maritime Association, and has been named assistant operating manager in charge of cargo handling facilities and terminal operations throughout the company's network of shore installations.

Standard Oil Company of California appoints K. H. SHAFFER as assistant general manager of its producing department. In his new position, Shaffer will direct oil field development work for the company. He is succeeded by C. W. GIBBS as northern district manager. F. A. HEITMEYER named general superintendent of producing in that area.

JAMES BARDSLEY named general manager of its Pacific Coast division by Trailmobile Company, with headquarters in Berkeley, California.

ELVAN HANSEL, superintendent of the Oakdale Hunt Foods plant, transferred to plant at Campbell, California. RONALD GREENLEY from Fullerton plant succeeds Hansel.

Under the guidance of William W. Eitel, president (left) and Jack A. McCullough, vice-president (left center) of Eitel-McCullough, Inc., San Bruno, California, significant advances were made in the development of special vacuum tubes for radar transmitters prior to and during World War II. Capt. F. R. Furth, USN (extreme right) Director of Naval Research Laboratory, Washington, D. C. awarded Eimac the Navy Distinguished Public Service Award for their contribution. Admiral Bertram J. Rodgers, Commandant, 12th Naval District, San Francisco, presided.

DR. F. G. SAWYER

DR. FREDERICK G. SAWYER, editorial representative of the eleven Western states for American Chemical Society, joins staff of Stanford Research Institute. His primary assignment will be administration of the Institute's Air and Water Pollution Research program. Dr. Sawyer will also consult on special problems in chemistry and chemical engineering research.

E. C. THOMAS named works manager at the Southwest Steel Rolling Mills in Los Angeles.

U. S. Atomic Energy Commission establishes an Advisory Board on Contract Appeals. The members are: SHELDON ELLIOTT, dean of the Law School of the University of Southern California, Los Angeles; HERBERT F. TAGGART, assistant dean of the School of Business Administration of the University of Michigan and former president of the American Accounting Association, Ann Arbor, Michigan; and CLARK C. VOGEL, attorney, instructor at the Rutgers University School of Law, and former member of the staff of the Office of the General Counsel of the AEC in Washington, Newark, N. J.

B. C. MCNEILL appointed assistant to the president of Rhodes Lewis Co., Culver City, designers and manufacturers of precision aircraft and ordnance equipment. McNeill was formerly general sales manager for Menasco Manufacturing Co.

RAYMOND REEVES elected vice-president of the Bay Area Council, 315 Montgomery street, San Francisco 4. Reeves continues as assistant General Manager and Director of Research of the Council staff.

PENBROKE GOCHNAUER, San Francisco attorney, opens an office at 111 Sutter street, where he will specialize in industrial relations. Mr. Gochnauer served as an industry member of the Tenth Regional and National War Labor Boards, counsel to the San Francisco Employers Council, and recently as general manager and counsel to the San Francisco Retailers Council. In his new office Mr. Gochnauer will be associated with the firm of Rogers and Clark.

ROGER BOWEN named head of Engineering Department by Cannon Electric Development Company, Los Angeles. D. FRANK JACKSON, Chief Engineer for the company, continues in the department as chief assistant to Bowen.

DEAN M. P. O'BRIEN, head of the Department of Engineering of the University of California, named Chairman of the Air Pollution Committee of the Bay Area Council.

Southwest Steel Rolling Mills, Los Angeles, appoints RAY E. COPELAND general sales manager. E. C. THOMAS named works manager for the company.

Columbia Steel Company, a subsidiary of United States Steel Corporation, announces

changes in its reorganization of the Metallurgical Division. ROBERT B. FREEMAN continues in charge of the Metallurgical Division with title of chief metallurgical engineer. G. L. VON PLANCK continues as metallurgical consultant. W. B. KENNEDY named senior service metallurgist, attached to the Central Sales Division, assisted by J. M. CARRERA, who transferred from the Pittsburg, California plant. C. H. FITZWILSON, JR., appointed metallurgical engineer in charge of bar, structural and wire products. A. H. DANIELSON appointed staff assistant to Dr. Freeman. Metallurgists attached to the Southern Sales Division with offices in Los Angeles are R. A. SCHAUS, senior service metallurgist; B. W. BUIST, service metallurgist; and J. W. WUNDERLICH, service metallurgist, formerly attached to the Pittsburg plant.

WILLIAM B. YAEGER elected vice-president, secretary-treasurer and director of Menasco Manufacturing Co., succeeding G. PRESHAW, who resigned as secretary-treasurer and director.

The 1950 Medal of Honor of the Institute of Radio Engineers has been awarded to DEAN FREDERICK E. TERMAN of the Stanford University School of Engineering. The medal, top award for distinguished service in the radio industry, will be presented in New York City as a feature of the IRE annual convention. This is the first time the award has been made to a Westerner.

Colorado

R. M. WILSON appointed vice-president of operations, and DONALD A. DUFF, vice-president, Traffic Sales and Public Relations, of the merged Monarch-Challenger Airlines.

D. G. FAUST

DELBERT G. FAUST appointed chief Engineer of C. A. Norgren Company, Denver manufacturer of pneumatic equipment.

Oregon

M. J. FREY elected president of Columbia Empire Industries, Inc. at Portland. IRVING T. RAU of St. Helens succeeds Frey. Other officers elected were VERN J. JOHNSON, first vice-president; ALEX HAY, second vice-president; GEORGE T. BRAGG, secretary-treasurer.

Washington

HENRY R. KRUSE, general commercial manager, named manager of Puget Sound Power & Light Company's southern division at Olympia. A. L. POLLARD, former general superintendent of operations, named operating manager.

Wyoming

Shell Oil Company transfers ED GALLAGHER, former division engineer of the Rocky Mountain area with headquarters at Casper, to Los Angeles, as senior mechanical engineer.

Associations Elect

WEST COAST LUMBERMEN'S ASSOCIATION: D. W. Gossard, Weyerhaeuser Timber Company, re-elected president; other officers re-elected were H. V. Simpson, executive vice-president; Judd Greenman, Oregon-American Lumber Corp., Veronia, vice-president for Oregon; G. E. Karlen, Eatonville Lumber Company, Tacoma, vice-president for Washington; Frank A. Graham, Hills Creek Lumber Company, Jasper, Oregon, treasurer; W. B. Greeley, Seattle, vice-president, and Harris E. Smith, Portland, secretary.

INDEPENDENT REFINERS ASSOCIATION: C. A. Johnson, Holly Development Company, president; D. B. O'Neill, vice-president and general manager; W. F. Barshfield, vice-president; and N. D. Taylor, Hancock Oil Company, secretary-treasurer.

PETROLEUM PRODUCTION PIONEERS: President, S. F. Bowlby, Shell Oil Company; vice-president, Glen Merkley, National Supply Company; treasurer, L. L. Aubert Bankline Oil Company.

DISTRIBUTORS ASSOCIATION OF SEATTLE, INC.: President, Morton Schwabacher, Schwabacher Hardware Company, vice-president, Don Weaver, Crescent Manufacturing Co.; treasurer, Lloyd F. Duvall, Pacific Marine Supply Co.; and secretary-manager, Dean Ballard.

SIERRA-CASCADE LOGGING CONFERENCE: President, Robert Grimmett, Pine Logging Company, Fresno; vice-president, Herb McMahon, Ralph Smith Lumber Company, Anderson; and secretary, Jack S. Berry, Michigan-California Lumber Company.

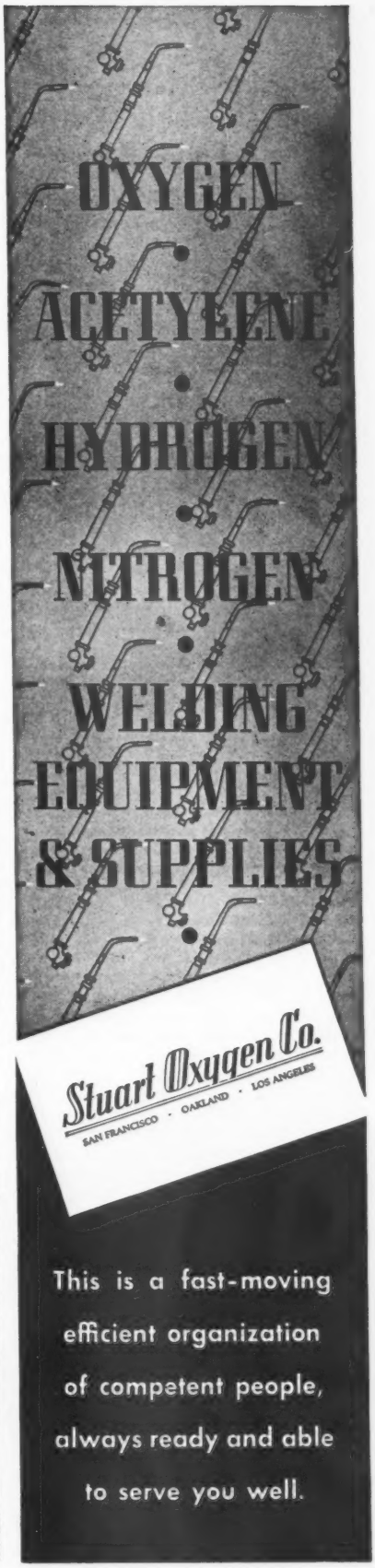
ADVERTISING ASSOCIATION OF THE WEST: Committee members on nominations for officers of the association are George Weber, Past President of Seattle Advertising Club and of AAW, partner MacWilkins, Cole & Weber, Seattle, chairman; John Anderson, President of Salt Lake Advertising Club, Quality Press, Salt Lake City; George Snell, immediate Past President, San Jose Advertising Club, Radio Station KEEN, San Jose; Charles E. Hoover, immediate past President of Phoenix Advertising Club, advertising director Republic & Gazette, Phoenix; Beatrice Kentz, President, Los Angeles Advertising Women, Batten, Barton, Durstine & Osborn, Los Angeles.

WESTERN PINE ASSOCIATION: Treasurer, C. T. Gray, Stockton Box Company, Stockton, California.

NATIONAL WOODEN BOX ASSOCIATION: H. H. Pein, Pein Box Co., Oregon, Ltd. first vice-president; C. T. Gray, Stockton Box Co., Stockton, California, third vice-president; P. V. Burke, ex-president of the Pacific Division, retired as president of the national association and was elected a member of the executive committee of seven.

FIR DOOR INSTITUTE: President (re-elected) Herman Snider, Acme Door Co., Hoquiam, Wash.; vice-president, Charles E. Devlin, Simpson Logging Co., Seattle; treasurer, W. M. MacArthur, Wheeler Osgood Co., Tacoma; secretary, A. E. Lundgren, Vancouver Door Co., Montesanto.

CALIFORNIA PERSONNEL MANAGEMENT ASSOCIATION: Richard E. Hambrook, Pacific Telephone & Telegraph Company, president and T. C. Erickson, Pacific-Alaska division. Pan-American World Airways, vice-president.



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Western TRADE WINDS

News about those who distribute and sell industrial equipment and materials

Bright spot of the February 13 meeting of National Supply and Machinery Distributors Association members in Area No. 6 (Pacific Coast) at San Francisco was the heavy attendance of top executives of prominent eastern firms, attesting to the growing economic importance of the West.

Notable among the speakers were: Franz T. Stone, president of Columbus McKinnon Chain Corp.; Harold F. Seymour, president of The Columbian Vise & Mfg. Co.; W. F. Caldwell, vice president of Cleveland Twist Drill Co.; H. P. Ladds, president of National Screw and Mfg. Co.; H. O. McCully, vice president of Russell, Burdsall & Ward Bolt & Nut Co.; Robert G. Patterson, vice president of Lamson & Sessions Co.; George H. Halpin, executive vice president of Minnesota Mining & Mfg. Co.; Ralph M. Johnson, vice president of Norton Co.; F. J. Tone, Jr., vice president of Carborundum Co.; Robert G. Thompson, president of Lufkin Rule Co.; James G. Geddes, vice president of H. K. Porter Co., Inc.; Frank L. Campbell, secretary of Fayette R. Plumb, Inc.; C. W. Otto, vice president of Millers Falls Co.; Harry L. Whitney, director of sales of Nicholson File Co.; Walter H. Gebhart, vice president of Henry Disston & Sons, Inc.; K. W. Atkins, vice president of E. C. Atkins Co.; J. C. Cairns, executive vice president of Stanley Works and E. P. Hallock, vice president and general sales manager of California Hardware Co.

Wm. A. Haseltine, of J. E. Hazeltine & Co., Portland, Ore., vice president of N. S. M. D. A. for areas 5 and 6, was chairman of the meeting. Other Westerners who are officers of the association are: A. W. Lohn, of Ducommun Metals & Supply Co., Los Angeles, on the Board of Governors for Area No. 6; and John T. Potts of the Gallagher Co., Salt Lake City; H. V. Waterman of Hendrie & Bolthoff Co., Denver, Colo., and A. J. Glesner of A. J. Glesner Co., San Francisco, three members of the association's Advisory Board.

A. J. SHEPPARD

Raybestos - Manhattan, Inc., 131 Mission street, San Francisco, appoint ALAN J. SHEPPARD as sales engineer for the Southern California area. Sheppard will specialize in the oil field and industrial trade. He will be available to augment the service of distributors and to assist with specialized problems.

McKinley Equipment Company, Los Angeles, take on the line of steel factory equipment manufactured by *Pollard Bros. Mfg. Co.*, Chicago, Illinois. The line covers a wide variety of equipment used by industry, such as Work Benches, Stools, Racks, etc. Territory served will be Southern California.

Seabury Engineering Company, Los Angeles, appointed exclusive Southern California distributors for *Kayel Products Corporation*, Detroit.

ALF M. MCLAREN named manager of the Los Angeles branch of *Fairbanks, Morse & Co.*, 4535 S. Soto street.

O'Brien Industrial Equipment Company, 1295 Folsom street, San Francisco, appointed sales representative for *Eriez Manufacturing Company*, Erie, Pa., producers of magnetic equipment. O'Brien Company maintains an engineering service which is available without obligation to purchasers of Eriez products.

R. L. SALING

Westinghouse Electric Corporation appoints RUSSELL L. SALING maintenance sales supervisor for the Pacific Coast district with headquarters at San Francisco. Saling joined Westinghouse in 1944 after serving as farm service director for the Eastern Oregon Light and Power Company and has been a maintenance salesman for Westinghouse at Portland since that time.

W. P. WOOLDRIDGE

Correction: Effective March 1, 1950, the *Heppenstall Company*, manufacturers of steel forgings, are represented in California, Montana, Idaho, Utah, Nevada, Arizona and New Mexico by *W. P. Wooldridge Co.*, 1060 Howard street, San Francisco 3, California. An adequate stock of Heppenstall products will be maintained in California for the convenience of the trade.

An item that appeared in last month's issue of *Western Industry* announcing Mr. Wooldridge's affiliation with Great Western Steel Co., Inc., is in error.

RICHARD L. BARNHOUSE named to newly created post of merchandising director of *Golden State Company, Ltd.* H. S. TUTHILL, JR., succeeds Barnhouse as southern division milk sales manager.

Babcock & Wilcox Tube Company, Beaver Falls, Pennsylvania, appoint H. F. LEFFERTY Pacific Coast sales manager, succeeding H. P. CURTIS, resigned. Lefferty's new headquarters will be in the Petroleum Building, 714 Olympic Boulevard, Los Angeles, California.

Green-Penny Company, Los Angeles, appointed exclusive Southern California distributors by *Supreme Steel Products, Inc.*, of Maspeth, Long Island, New York, manufacturers of steel lockers, shelving and storage cabinets; and *Aluminex, Inc.*, Los Angeles, manufacturers of aluminum skylights.

W. G. Ballantyne Co., Portland, Ore., appointed sales representatives and stocking distributors by *American Flexible Coupling Co.*, Erie, Pa. Territory served is Oregon and southern Idaho. Ballantyne firm also appointed sales representatives in northwestern territory for the line of hydraulic presses manufactured by *Lake Erie Engineering Corp.*, Buffalo, N. Y.

P. B. ERWIN named manager of production and service for *Bethlehem Supply Co. of California*. J. C. GRAVES, JR., appointed manager of machinery sales.

WILLIAM A. GERHARDT named Los Angeles district manager for *Reichhold Chemicals, Inc.*, succeeding FRANK E. DILLON, retired. Gerhardt will be assisted in his new position by RUDY MELINAT and BOB SWISHER, both Dillon trained sales representatives.

Olympia Supply Co., Roseburg, Oregon, named dealer for *Allis-Chalmers* motors, controls, Texrope drive equipment, and centrifugal pumps in Douglas and Curry counties.

LEWIS B. KELLY named sales engineer for *Smith-Davis Company*, manufacturers of industrial finishes, 10751 Venice Blvd., Los Angeles 34. He will cover part of the Los Angeles territory.

Modernair Corporation establishes new sales outlets in Los Angeles, San Francisco, Oakland, Portland and Seattle, to provide engineering assistance on new installations. The *Rucker Company* will continue to represent Modernair Corporation through branches in all principal West Coast cities. Modernair Corporation's main office and plant is located at 4222 Hollis street, Oakland 8, California.

Leslie B. Worthington, president of United States Steel Supply Company, warehousing subsidiary of U. S. Steel, is shown presenting a stainless steel shovel to Paul C. Van Cleave, Los Angeles District Manager, whose warehouse did the best job of "digging" for sales in 1949. Looking on are Clifford W. Lord (left), vice-president in charge of Pacific Coast warehouses and former Los Angeles district manager, and Marcus J. Aurelius, sales vice-president.

C. C. KIRK named manager of *Buda Engine & Equipment Company's* Seattle branch at 427 Ninth Avenue North, Seattle 9, Washington, succeeding A. T. JACKSON, who transferred to Portland as manager of Buda's new branch at 2580 N.W. Upshur street.

STEWART M. LOWRY, for 18 years with *Proctor & Gamble* as chief industrial engineer and half the time also as director of industrial relations, and for the last four years in New York with *Booz, Allen & Hamilton*, management consultants, comes to San Francisco as coordinating partner of the latter firm for its Western region. He has opened offices in the Russ Building. The firm's Los Angeles office will remain under the immediate direction of WM. C. ELDRIDGE.

GRAHAM MARKS appointed general manager in California for the *Caine Steel Company*, with headquarters in Los Angeles.

Birdsboro Steel Foundry and Machine Company appoint MILLER-JOYCE, 122½ S. Vermont Avenue, Los Angeles, to handle all types of Birdsboro hydraulic presses and related equipment in Southern California and Arizona territory.

Kingwell Bros. establishes new factory branch in Los Angeles at 2618 E. 53rd Street. Complete stocks will be carried of all catalogued Kingwell Bronze Bushings and Bearings, Oilite Bearings and Asarcon Continuous Cast Bearings and Bar Stock under the direction of Larry Ames. Almquist Bros. continue to distribute a full line of Kingwell products in the Los Angeles area.

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TRADE WINDS

Continued from page 79

Personnel changes at *Goodyear Tire & Rubber Co., Inc.*, include: J. H. BARHAM appointed manager of Merchandise Distribution department in Los Angeles, replacing E. J. ECKI, deceased; C. A. CRAFTS, former assistant district manager, Los Angeles, named district manager at Seattle, replacing W. P. MCGLYNN, who has been made Manufacturers' Sales representative in San Francisco; and W. T. CLARK, former Truck Tire representative in Portland, named assistant District manager at Los Angeles.

Miller Steel Products Co., Inc., Los Angeles, appointed exclusive California distributors for the *Palmer-Bee Company* of Detroit, Michigan, representing their complete line of conveyors, gear reducers and power transmission equipment. They offer complete sales and service facilities for the Palmer-Bee Company and will engineer, fabricate and erect new systems as well as alter existing systems. A complete parts stock will also be maintained in their local warehouse.

H. C. GALITZ of Burlingame, California, appointed *Westinghouse* Elevator division manager for the Los Angeles area. Formerly in charge of new sales activities in the San Francisco area, Galitz will take over his new assignment with headquarters at the Los Angeles office, succeeding GANO R. BAKER, who transfers to the division's headquarters in New York City as sales manager for the Eastern district.

Mills Industries, Inc., appoint *Thermal Products, Inc.*, Los Angeles, distributor to handle their line of compressors and condensing units in Southern California.

Tecumseh Products Company, manufacturer of refrigeration units, establishes a service branch in Emeryville from which it will service the Western United States, with headquarters at 1301 Park Avenue. More than $150,000 in equipment will be installed in the Emeryville branch under the direction of Clyde Giltner, vice-president of the company. Initial employment is estimated at 60 to 70 persons, of which all except three or four key men from the Tecumseh plant, will be employed locally.

P. J. TRACY appointed district representative in charge of sales in the northern California territory by *Globe Steel Tubes Company*. Headquarters and offices have been established in San Francisco at 420 Market street. Prior to this appointment, Tracy served as sales representative in the Southern California territory.

Personnel changes at *Lincoln Electric Co.* include: C. L. STOCKER assumes sales and engineering responsibilities in the San Francisco area with offices located at 1303 Stanford Avenue, Emeryville, California; M. F. YALE and T. NICHOL, both recent engineering graduates, join the welding engineering staff of the Emeryville office, and A. L. PATNIK assumes responsibility for Lincoln welding engineering in the Seattle district with offices located at 1914 Utah Avenue, Seattle, Washington.

LLOYD T. CRAMER appointed *Westinghouse* Elevator division salesman with headquarters in San Francisco. Cramer will be in charge of new sales activities for the division in the Northern California and Pacific Northwest area.

Liberty Equipment & Supply Co. of Los Angeles named West Coast representative for *Suburban Industries*, 4710 Armitage Avenue, Chicago 39, Illinois.

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Find the type you need from this list:

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For Invitations See Your Business Machines Representative

Among the ten retail salesmen that have been honored by *General Motors Corporation,* 13400 West Outer Drive, Detroit 28, Michigan, for their outstanding achievements in the sale of diesel engines in 1949, are three Westerners. The following men received the 1949 W. T. Crowe Diamond Award: S. T. COLLINS, JR., Olson Manufacturing Company, Boise, Idaho; GILMORE R. SALYERS, Anderson-O'Brien Company, Los Angeles, California; and BRADLEY BARTLETT, Evans Engine & Equipment Company, Seattle, Washington.

Chemical Division of Kaiser Aluminum & Chemical Sales, Inc., appoint J. T. PUTNAM, former head of the Pacific Northwest territory, in charge of the Los Angeles sales area, with headquarters in the Subway Terminal Building. R. M. OLIVE, former superintendent of Permanente Cement Company's Diamond Division plant in Seattle, heads the Seattle district with offices in the Hoge Building. Their activities will be directed and coordinated by Western division sales manager GEORGE DAVIS.

Super-Heater, Inc., New York, establishes a Western division with headquarters in Los Angeles and branch offices in Seattle and San Francisco. ROBERT M. HATFIELD, JR., named general manager.

Hyster Company, 2902 N. E. Clackamas Street, Portland 8, Oregon, appoints KARL T. BARR sales manager in California, Arizona, Utah, Nevada and Hawaii. Barr comes to the Hyster Company following 10 years of varied experience with the Caterpillar Tractor Co. of Peoria, Illinois. He has also done sales administration for Peterson Tractor and Equipment Co. of San Leandro, California, and Trackson Company of Milwaukee, Wisconsin. Another Hyster appointment named JOHN F. WRIGHT district truck sales manager in a large Western area of the continent, including Alaska, western Canada, Washington, Oregon and parts of Montana and Idaho. Wright has been with this company for more than a year in the engineering department and previously had three years' association with Pratt and Whitney Aircraft of Hartford, Connecticut.

Complaint Filed on Cargo Handling Charges

Seattle Traffic Association, co-sponsored by the Seattle Chamber of Commerce and the Port of Seattle, has filed a complaint with the U. S. Maritime Commission against the Pacific Westbound Conference, requesting equalization of the rates at all Coast ports, according to word received here from the Seattle Chamber of Commerce.

Crux of the allegation is that Pacific Northwest shippers are being discriminated against through the assessment of higher cargo-handling charges than those of California ports.

Members of the Pacific Westbound Conference, composed of about 25 steamship lines operating from the Pacific Coast to the Orient have been negotiating among themselves for the past three years in efforts to decide on equitable rates, so far without results.

Research Group Formed By Northwest Engineers

An organization of schools of engineering in the Pacific northwest has been formed to coordinate industrial and engineering research by exchanging and publishing information on research work in progress in the northwest colleges and universities, promoting fundamental and applied industrial and engineering research and encouraging development of regional resources.

The group will request recognition next June as the Pacific Northwest section of the Engineering College Research council.

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INDEX TO ADVERTISERS IN THIS ISSUE

A

Acme Steel Company 68
Alan Wood Steel Company 11
Aluminum Company of America 7
American Appraisal Company 61
American Felt Company ..... 3rd Cover
Anaconda Copper Mining Co. & Subs. 3
Anaconda Wire & Cable Co. 3
Appleton Electric Company 51
Arco Company, The 12
Atchison, Topeka & Santa Fe Railroad 23

B

Bethlehem Pacific Coast Steel Corp. 24
Butler Manufacturing Company 13

C

California Barrel Co., Ltd. ..... 2nd Cover
California Spring Co., Inc. 63
California-Western States Life Insurance Company 8
Chicago Screw Company 80
Coffing Hoist Company 78
Colson Equipment & Supply Co. 60
Crane Co. 4

D

Denver Fire Clay Products Company 60
Diamond Chain Co., Inc. 10

E

Ederer Engineering Company 56
Electrolift, Inc. 58

F

Fiske Bros. Refining Co., Lubriplate Division 58
Food Machinery & Chemical Corporation, Packing Equipment Division 61
French & Hecht Division, Kelsey-Hayes Wheel Co. 72

J

Johnson Gear & Mfg. Co., Ltd. 70
Johnston, A. P., Company 82

K

Kaiser Steel Corporation 6
Kelsey-Hayes Wheel Co., French & Hecht Division 72

L

Lubriplate Division, Fiske Bros. Refining Co. 58
Lyon Metal Products, Inc. 18

M

Maas, A. R., Chemical Co. 75
Martin Brothers Box Company 55
Mathews Conveyor Co. 70
Metzgar Co. 75

N

National Paint, Varnish and Lacquer Association, Inc. 17
National Supply Co., The 9
Nutting Truck & Caster Company 75

O

Oakite Products, Inc. 79

P

Pacific Coast Gas Assn. 74
Pacific Telephone & Telegraph Co. 71
Packing Equipment Division, Food Machinery & Chemical Corporation 61

R

Revere Copper & Brass, Inc. 47
Richards-Wilcox Mfg. Company 52
Ryerson, Joseph T., & Son, Inc. 34

S

Shell Oil Company, Inc. 16
Signode Steel Strapping Co. 72
Smoot-Holman Co. 79
Snap-On Tools Corporation 59
Standard Conveyor Co. 57
Standard Oil Co. of Calif. 30
Stephens-Adamson Mfg. Co. ..... 4th Cover
Stuart Oxygen Company 77

T

Tide Water Associated Oil Co. 20
Towmotor Corporation 53
Triplex Screw Co., The 21

U

Union Oil Company of California 22
Union Pacific Railroad 32
United States Steel Corporation 26
United States Steel Supply Company 26

V

Victor Equipment Company 74

W

Wagner Electric Corporation 25
Western Asbestos Company 80
Western Gear Works 49
Whiting Corporation 28
Wirebound Box Mfgrs. Association 73
Wisconsin Motor Corporation 65

Y

Yuba Manufacturing Co. 80

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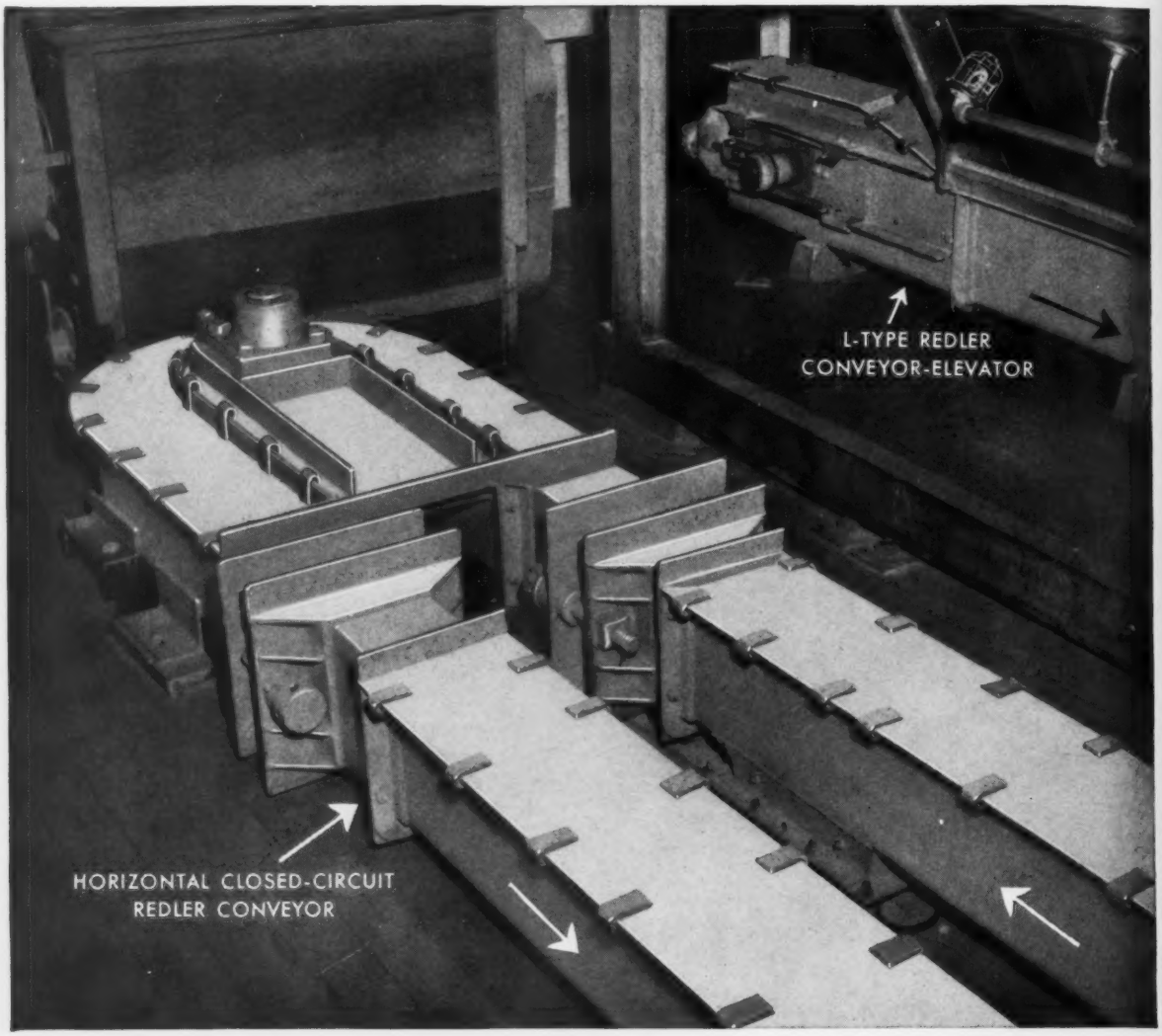

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